1869

1869

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FOREWORD

We have always been friends of the sailing sport. Around two years ago we came across a book about clippers of the 19th century. The elegance of the fast yachts and the atmosphere of the turbulent era captured us totally.

The real work began after we spontaneously decided to use this theme as a story for a trade simulation. We spent weeks in University libraries and museums collecting all available material of that era. The more we found out the more fascinated we became. In our research the year 1869 seemed to appear most frequently. It was the year of the opening of the Suez Canal and at the same time the turning point in shipping history. 1869 had to be the title of our simulation.

The time for research and material collecting was over . The examining and sorting of the material and the first thoughts on the shape of the game, drafts on paper and the programming started.

Right from the start our intention was to create a wide history and trade simulation, which was as accurate as possible including true events, and also be graphically superior to previous trade simulations.

After spending approximately three man years, we look back over an interesting and sometimes hectic time. Through the program we had a look into a piece of history and experiences varied from war and death to the splendour and greatness of marked times.

1869 is dedicated not only to the proud ships which sailed the seas in the last century, but also to the countless men who lost their lives while performing their hard work.

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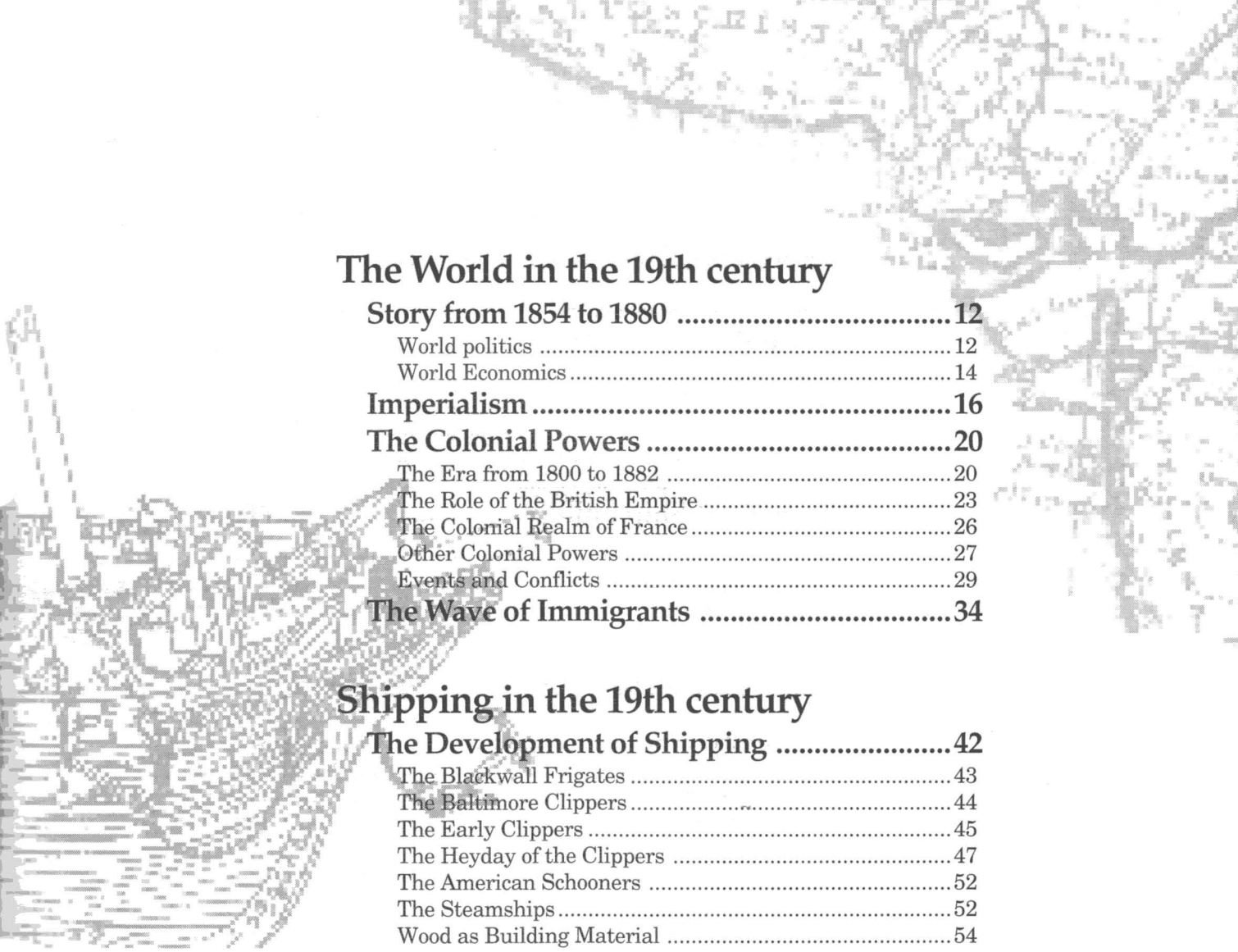
LOG BOOK



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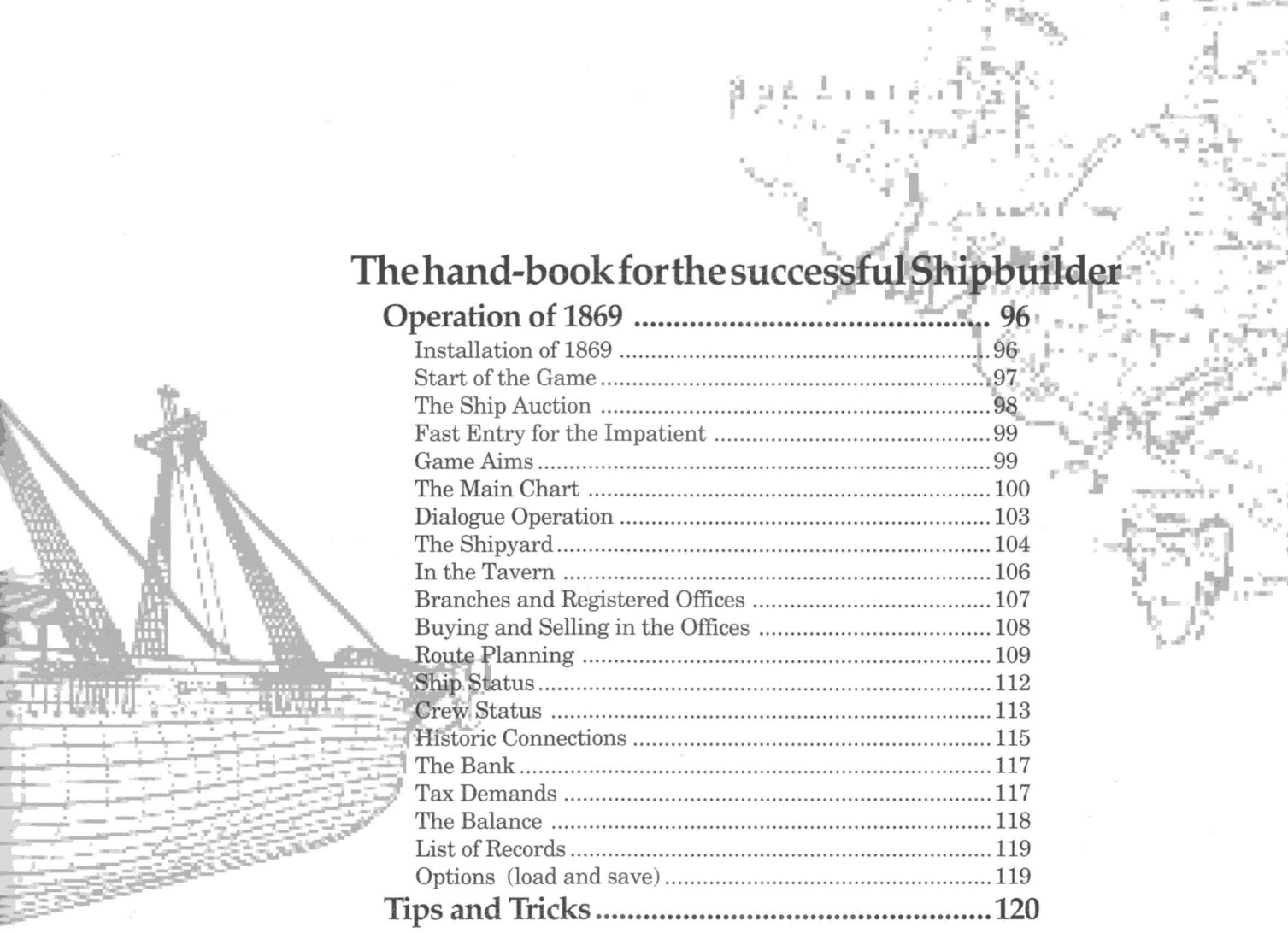

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The World In The 19th Century

The Story From 1854 To1880

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The Story from 1854 to 1880

The 19th century was the age of change and progress. It was an era for political reform which, step by step, involved more people taking part in political decisions and was an era of advance. The threshold of the age of industry promised better production methods, stronger trades and a more promising future. Natural science added to progress, as new findings promised longer and healthier lives.

The growing importance of new raw materials like oil and cotton, and the discovery and increased production of mineral resources gave the economy, especially in the second part of the 19th century, a tremendous boost.

⚓ Abraham Lincoln, 16th President of the USA, shot in 1865 by a supporter of the Southern States.

World Politics

The second half of the century was a quiet time. Wars did not last very long and were limited to the smaller regions. A short summary should give us the most important political events from 1854 to 1880.

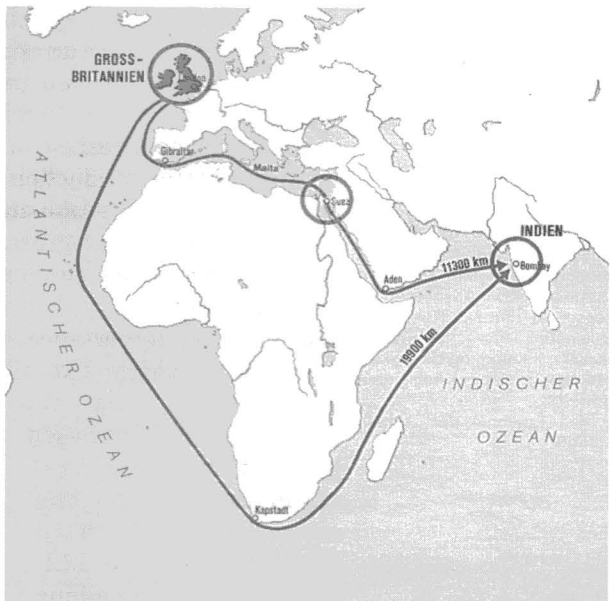
1854 The Crimean war between Russia and Turkey is still in full swing. France and Britain enter the war on Turkeys side. Two years later the Paris Peace talks ended the Crimean war, the Black sea became a neutral zone. International maritime law forbade privateering and guaranteed private ownership in naval warfare. In the same year the Buren Free State Transvaal was founded and later the Republic of South Africa. Two years later the East India Company lost its power over India and Great Britain, who had put a Viceroy into India. Claims on surrounding South China territories kept leading to wars with France and Great Britain against China. A long-lived era of tension with many sealed and broken peace treaties was born.

1860 Abraham Lincoln became the first republican president of the USA.

He was for the abolition of slavery, which meant eleven Southern States leaving the USA in 1861. The creation of the confederacy was the marked beginning of the American Civil War between the Northern and Southern States. After 4 years of bitter fighting the Northern States won due to their technical superiority.

In 1867 the USA acquired Alaska for a mere 7.2 million dollars from Russia which was the best business deal of all time. South Africa experienced a boom era with the discovery of the diamond fields in the Orange Free State.

The opening of the Suez canal in 1869 marked one of the most important milestones in the world economy. The sea route to Asia was nearly halved when the dangerous trip around the Cape of Good Hope was no longer necessary. Just as important was the opening of the Pacific Railway which connected the West coast with the East coast.



⚓ The sea route before and after the opening of the Suez Canal. The route was nearly halved and the dangerous Cape of Good Hope could be avoided.

France became Independent in 1870 after a war with Prussia, and a year later the German Reich was born with Otto von Bismark as Chancellor.

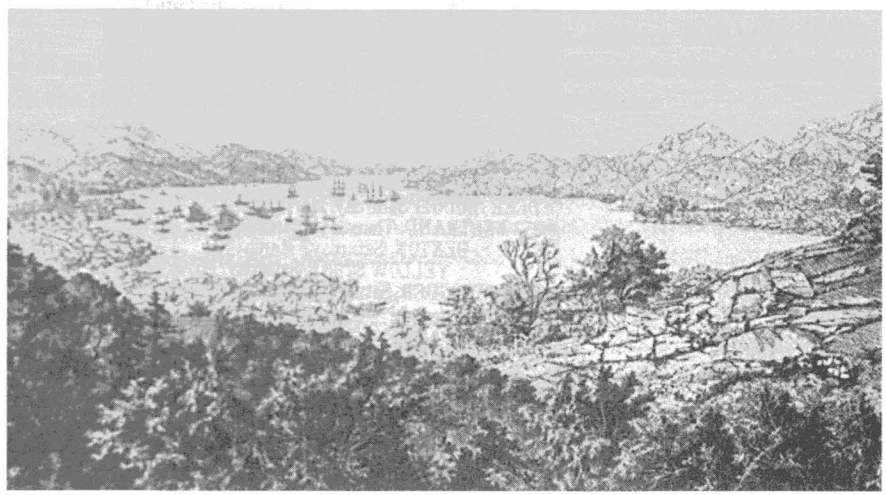
The World Economy

The second half of the century presented itself as the time of prosperity and technical revolution. The building of Railway Lines had an enormous boost which in turn increased the demand for steel. The length of the International railway network increased twofold every ten years.

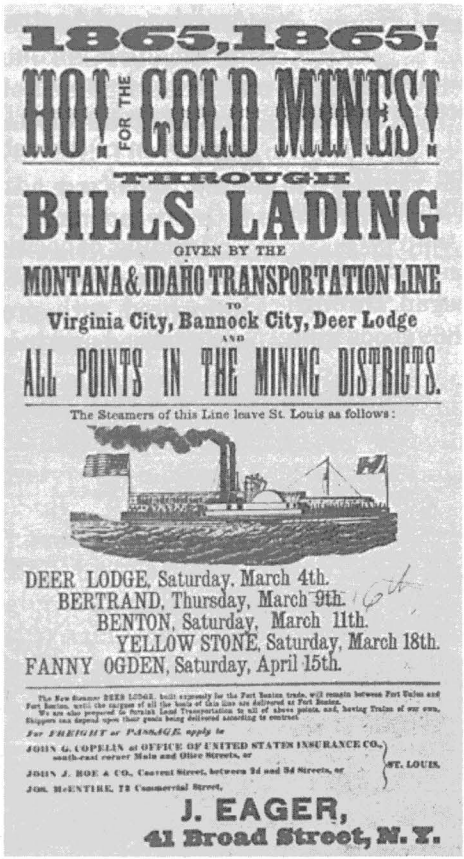
In 1854 England lifted the last prospected duty and so the era of free trading began. Through the opening of the Suez Canal in 1869 goods from Europe reached India much quicker. At the same time bigger and faster ships came into use and pushed out more and more sailing ships. The importance of raw materials, like oil and cotton increased. The demand for cotton in Europe was greater due to the lack of production during the American Civil War. The finds of gold in America and Australia, and diamonds in South Africa attracted no end of Europeans to the places of discovery.

Improvement in the steel production enabled expansion of the vehicle and machine building industries.

Loading capacity was increased greatly by the steamships in 1870. Agriculture was heavily influenced with production being intensified, rationalised and increased.



⚓ The port of Nagasaki in a lithography from 1857. Only after the USA threatened war Japan opened its previously closed borders to the export trade.



Sugar trade improved greatly and cane-sugar was prefered to sugar-beet.

The increase of the world population and the colonization in the nearly uninhabited parts of the continents of America and Australia, the development of natural resources, the transition of production to new techniques and unimaginable expansion in industry, made the world not just bigger and greater but also brought it closer together.

Steamships and the Railways bridged distances and brought trade partners closer. World trade increased 4.7 times between 1850 and 1890.

Bigger distances, investments and concentration were the foremost signs of the new industrial and technical production expansion. Trade kept pace and increased strongly. The introduction of Industrial and agriculture duty through the German parliament in an era of free trade meant an economic war declaration, and the beginning of the pre war period, a time of potentially high tension and open aggression.

Imperialism

Imperialism is defined as the striving for international standing and power. An Imperial state would try to affiliate as many territories to their own political and economic influence. Starting in the mid-seventies of the 19th century in Great Britain, it spread to all great world powers. Besides the traditional colonial powers of Great Britain, France and Russia, the USA, German empire, Belgium, Italy and Japan also strived towards imperial power. The race for the division of the world lasted until the beginning of the first world war in 1914.

Imperialism is today more of an emotional and negative term, but not so in the past. It was the utopia of a World Power with international standing if not World domination. The politics were always of a global type. Strongly linked with national prestige, it led to excessive Nationalism. The white race and its civilisation were regarded as superior. That mentality became more popular, influenced by Darwins theory. The Darwin theory rested on the conception of the natural elite. With his help all of the brutality against natives and colonial tribes seemed justified.

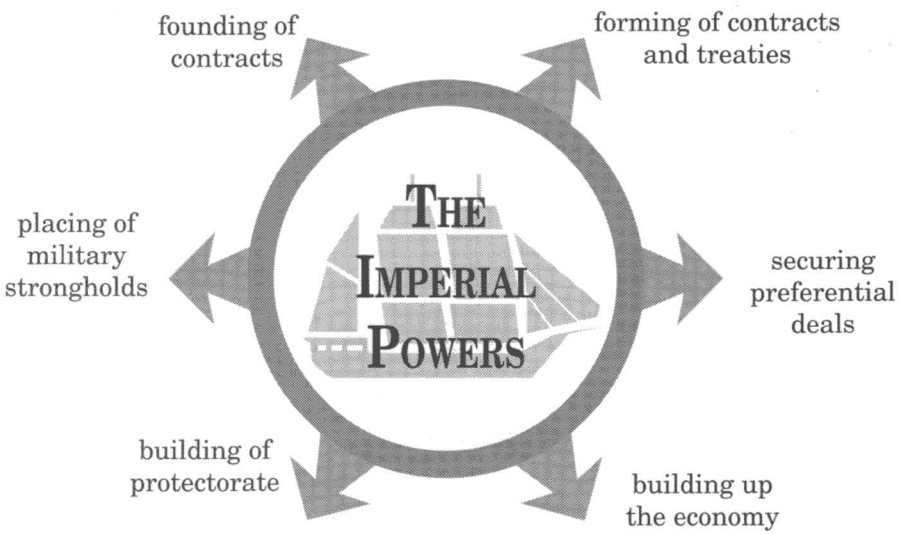
The actual motives for Imperialism cannot be traced back conclusively. In 1852, Benjamin Disraeli who later became the speaker for British Imperialism, described the English colonies as "millstones around our neck". But in 1875 the British minister Edward asked "Who is talking about giving up the colonies? No demand is as popular as the one to keep our colonial empire!" With this change of mood, a new era became easily recognised. The motives were power, prestige and political competitive thinking. Many people saw it as an important and honourable mission, to teach primitive people the European culture and way of life. But many economic interests could have been the founder of Imperialism.

Since the mid 19th century, Europe produced more buying power than the European was allowed. The goods could no longer be sold on the domestic market. This increased during the depression years of1873 to 1876. The industrialists and buyers were forced to look for new outlets and investment possibilities. The government supported this, as they could acquire foreign territories which provided useful raw materials for domestic industry.

After England had been in the process of building a gigantic empire, other states began to desire world power. As the realisation of this goal involved the use of force and the building of railways and roads, only the great Powers with accordingly big war and trade fleets could be involved.

⚓ The map shows the division of Africa under colonial power. Only the state of Liberia and the main part of Abyssinia remained free.

Through the acquisition and economic exploitation of foreign territory, the Imperial states increased their power and wealth. It used any means available from the commercial activity of single settlers in contracted trade-connections to forceful oppression of the natives. The raw material of the colonies was exploited and shipped to the mother country. There it was manufactured into end-products and partly resold to the colonies at a great profit. A most profitable cycle for the colonial powers' economy developed.



The Colonial Powers

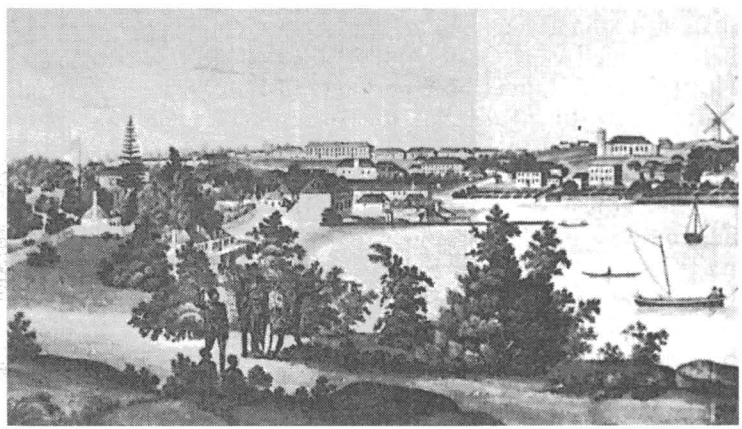
Europe had several colonial eras during the 16th century, with it also colonial powers. In the beginning it was Spain and Portugal who were the leading powers, but in the 19th century it was Great Britain, France and Russia.

The heyday of Imperialism began between 1870 and 1880, and finished just before the 2nd World War. The world became divided under the few colonial powers. Approximately 72 million square kilometres and over 560 million people were under colonial rule in 1914. That made up more than half the total land surface of the earth and nearly a third of the worlds population.

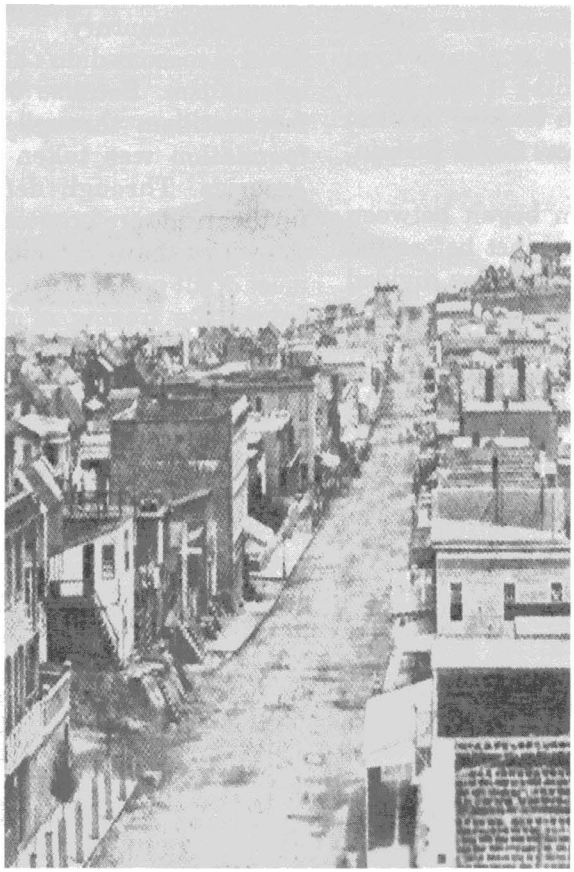
The time between 1880 until 1882

After Latin America's independence, the European possessions overseas became smaller. Generally the colonial empire shrank in the first quarter of the 19th century.

Several reasons didn't allow for an increase in colonialism. Because of the withdrawal of mercantilism through the free trade, the foundation was taken away, especially in America. Through defensive politics and further trade preferences, it was advantageous to own as many colonies, trade stations and most of all ports. The beginning of free trade led to the freeing of restrictions. England opened its colonies to foreign ships and traders. So England contributed greatly to the success of free trade politics, even before it finally

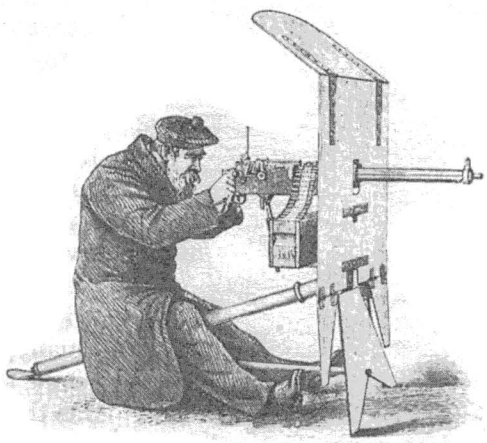


View of Sydney, Australia around 1806



abolished the trade monopoly between the mother country and the colonies in 1849.
By then free trade was already happening. The reorganisation of Europe after the Vienna congress and the following 5 year peace, reduced the military and strategic value of many possessions. Many of them were only dead pledges or diplomatic exchange objects. Thanks to Englands overpowering fleet, it managed to acquire significant territorial possessions. England was in the position to lay claim to all overseas regions and enforce it. As the British didn't seek further expansion, no systematic political expansion took place in Europe. It wasn't the anti-imperialist attitude that stopped them. As Canada, Australia and also the United States were freely available to Immigrants, England as leading industrial power, was not dependent on the colonial market outlets.
Most European states were skeptical over new acquisitions of colonies until 1882.

One assumes that because of the colonial and expansion policies, no overseas acquisitions were made. Local interest and the wish for securing borders around possessions, were the main reasons for further occupation. The impetus came from the colonies themselves. The industrialisation and the great technical advance brought a vast widening of trade connection to the whole world. The development of the steamship gave International trade an enormous boost. This increased political interference. The development of military technique and the power structure benefited Europe. No non European country, with the exception of the USA, had resistance to the military power. A small English expedition corps was able, through their advanced weapon superiority and the efficient use of their means, to bring China to it's knees between 1839 and 1842. The conquest of India was also due to the military superiority of the English. Great empires fell apart after confrontations with Europes super power. The ease of occupying new colonies led to a strengthening of colonial expansion as never before witnessed.



Maxim machine-gun
A present from the inventor Hiram Maxim to Stanley.

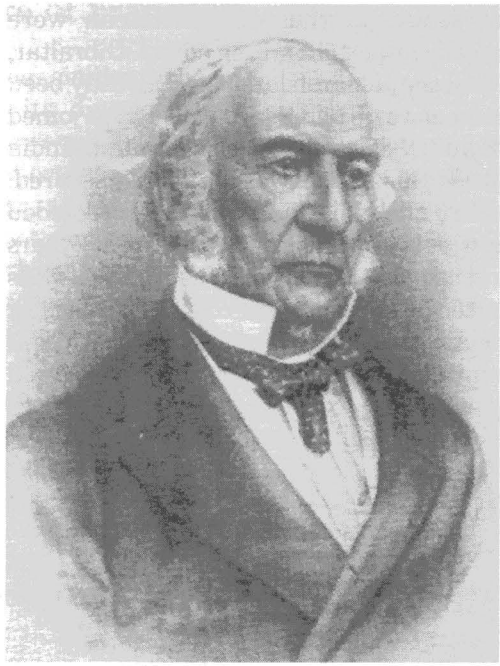
The Role of the British Empire

The British Colonial Empire differed through it's size and diversity, and free trade differed greatly from other colonial powers. At it's peak, around 1933, the British Empire had extended to a hardly imaginable 31.6 million square kilometres and a population of 502 million. That was nearly the equivalent of a quarter of the land surface of the earth and nearly a quarter of the population. In 300 years of colonial politics, the British had built an enormous empire. Every adjoining region, with the exception of the USA was included in the Empires federation.

India was regarded by the English as the foundation pillar of the empire. The securing and controlling of the sea route was, therefore, a priority task. In particular the Suez Canal played a decisive role. The opening of the canal in 1869 was the most important occurance for the history of modern India and for the trade in Europe and would become of fundamental importance as trading volume doubled in subsequent years.

⚓ Benjamen Disraeli, 1804 to 1881. Conservative Prime Minister of England 1868 and 1874 to 1880.

And yet Great Britain had initially opposed the building of the canal as she suspected a hostile move by the French. One year after the opening of the canal the British government even rejected the acquisition of a share package offered by Egypt. The change in British canal politics was demonstrated in 1875 by Benjamen Disraeli, an ardent representative of the new Imperialism, when he ordered the acquisition of the share package. A further demonstrative step to manifest the interest in India and the connecting routes was the proclamation of Queen Victoria, the Empress of India on the 1st January 1877. Through her interest in the Suez Canal, England became more and more involved in the affairs of India and the country finally came under British rule in the year 1882. Of equally great strategic importance for the securing of the sea routes was the acquisition of Cyprus in 1878.



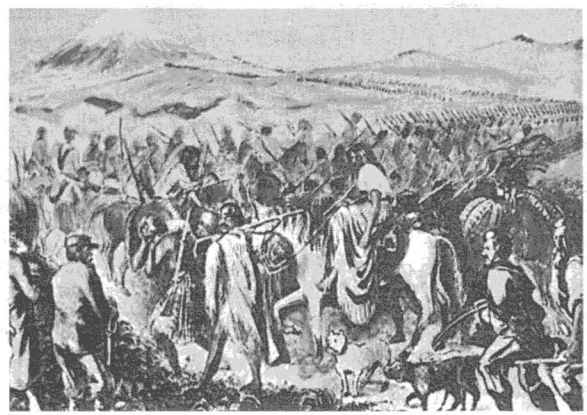
⚓ William Gladstone, 1809 to 1898, Prime Minister of England during the period from 1868 to 1898. Supported free trade and was an opponent of Disraeli.

Originally the conquest of India was not planned, the intention merely being to protect British trade and to create strong points. Only when the real importance of the Indian market became apparent, Englands interest grew. Politically too, India was important for England. Although a poor country, India was a great military empire. England placed herself in an already feathered nest so to speak and became herself one of the two main powers of the East. At one stroke, therefore, the British Empire had under its control an additional population of 200 million inhabitants. No other European colony was of such political and economical importance.

More than any other, the Indian army increased the political and military might of Britain. One has to bear in mind that although Britain had at her disposal the strongest naval force, her regular army which numbered 250,000 men distributed in garrisons throughout the empire, was militarily superior. With the aid of the Indian army deploying over 150,000 men and a huge mobilisation reserve, Britain was able to establish itself as the greatest landforce of the East. Moreover the Indian army was completely maintained by India. Thus Britain was able to play a leading roll in world politics which could never have been paid for by the British taxpayer. Only in this way was it possible for the British to play a leading role in the apportioning of East Africa and South East Asia.

Possessions in the Mediterranean were strategically important strong points. Gibraltar, Malta and the Ionian Islands had already been acquired before 1815. Cyprus and Egypt joined in 1878 and 1882 so that the sea route to India through the Suez Canal was completely secured. Up to 1880 the expansion in Africa proceeded very slowly. It was only in the last twenty years of the 19th century that this process was accelerated by the race of the colonial powers. At first the African colonies appeared to be without importance economically but changed subsequently due to the increasing significance of their products for world trade. In particular the diamond and gold finds of 1868, 1869 and 1886 in the Transvaal drew the British to Africa. So in 1871 the diamond fields belonging to the Orange free-state and those in the Transvaal (1877) were annexed. At the height of Imperialism the British dreamt of an Africa "British from the Cape to Cairo ". On British territory a railway line was to cross the whole of Africa from North to South. However this dream of the British was never to be fulfilled.

During the course of time the importance of many colonies underwent change. Especially the Island colonies that had been annexed initially for purely strategic reasons. Due to the increasing demand for their products such as rare wood and rice on the world market, the colonies acquired economical gain. Many colonies supplied valuable raw materials and thus improved the British Balance of trade. The richer colonies were also good markets for British goods. Many colonies, however, produced and consumed very little. With strictly economic profitability considerations the British would have dispensed with many of their colonies.



⚓ British troops with Maori auxiliary forces on the advance in New Zealand in 1868.

The Colonial Empire of France

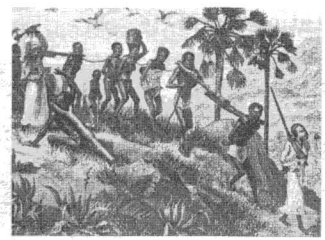
The French colonial empire was similar to that of Great Britain because of its diversity and geographical scattering. However France did not possess colonies of the importance of India or the British dominions such as Canada and Australia. France too did not pursue planned colonial policies from the 19th century up to the year 1871. Local interests and lawsuits were the main reason for new acquisitions although the protection of missionary stations and trading bases were further considerations.

Compared with England the essential difference was that France owned few colonies at the start of the 19th century which could have led to the starting point of further expansion. Also French overseas trading was too unimportant to make further acquisitions of colonies meaningful. For French colonial thinking the economic aspects were decisive. In order of interest, the colonies had to yield profits for the mother country. Further more, France continued to adhere for a long time to mercantilism since France was inferior to Great British as far as industry and shipping were concerned. Up until 1860 the colonies were only allowed to trade with the mother country and French traders. However, since France sought an improvement in its relations with Great Britain and its colonies depended on British goods, it introduced free trading for a period of time. In 1860 the colonial markets were opened and customs duties lowered. Free trading was extended to include the West Indies in 1861, Guyana and Senegal in 1864 and Algeria in 1867.

⚓ The king of Ashanti, Sir Osei Premph 11. This indicates the picture of royal formalism at the courts of the West African Kingdoms.

In the main French Imperialism concentrated on the development of Africa and on the conquest of Indochina. To this end friction frequently arose with the British. In Africa the evident goal was a compact territory in the shape of a West East belt. Following much fighting with China the French were able to secure their influence and their possession of Tongking, Annam and Laos.

After 1871 French Imperial politics were greatly influenced by the defeat inflicted by Germany . France lost the war against Germany during the years 1870 and 1871. Consequently the French had to relinquish their position of priority in Europe to the German empire and they feared political isolation. In order to be recognised once again as a world power, the French intensified their endeavours towards new colonies with the aim of once more extending their sphere of power.



⚓ African slave traders with their "merchandise". A glimpse into the dark times of the slave trade.

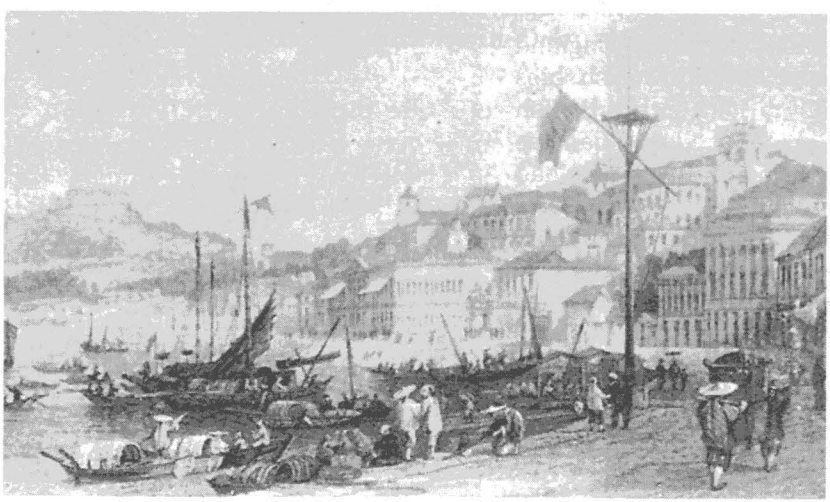
The Other Colonial Powers

The colonial territories of all other countries were relatively small compared with those of England and France and they were sharply defined geographically. The crucial points of Portugal, Germany and Belgium were in Africa. The Russian colonies were of considerable size but formed a geographical unit with the mother country.

Hollands colonial empire stretched across Indonesia and some smaller islands in the West Indies. As the only modern colonial empire the Netherlands stopped expanding during the period from 1815 to 1945 and were satisfied with occupying and developing the already existing territories. The island world of Indonesia was indeed one of the most valuable European possessions. It was a typical plantation colony and yielded considerable profit with exported goods such as sugar, tobacco, rubber, coffee, copper, mineral oil and tin. The colonial government in Batvia possessed similar authority as granted to Calcutta by the British.

Although Portugal belonged to the first colonial powers it acquired the majority of its possessions only after 1884. In spite of being a poor and martially weak country it was able to keep its colonies longest. By 1884, however, the Portuguese colonial empire was marked by disintegration. From 1580 to 1882 it lost one colony after the other. Only with the colonial division of Africa at the end of the 19th century the empire was once again enlarged. Its gains were due to the rivalry of the other states. So territories such as Angola and Mosambique were practically given to Portugal as a buffer zone against British expansion. Portuguese colonial politics, however, could not compete with the other states and failed to yield the expected profit.

The Belgian colonial empire consisted of just one territory-the Congo. However this colony was practically the private property of King Leopold. By cunning and shifty moves he succeeded, aided by misled humanitary organisations to make the Congo his possession. He exploited this territory in an unyielding and drastic manner and caused many critics to protest. It was only in 1908 that the Congo became the possession of the Belgian state. Due to the rigorous exploitation and because of rich mineral resources this colony was especially profitable.

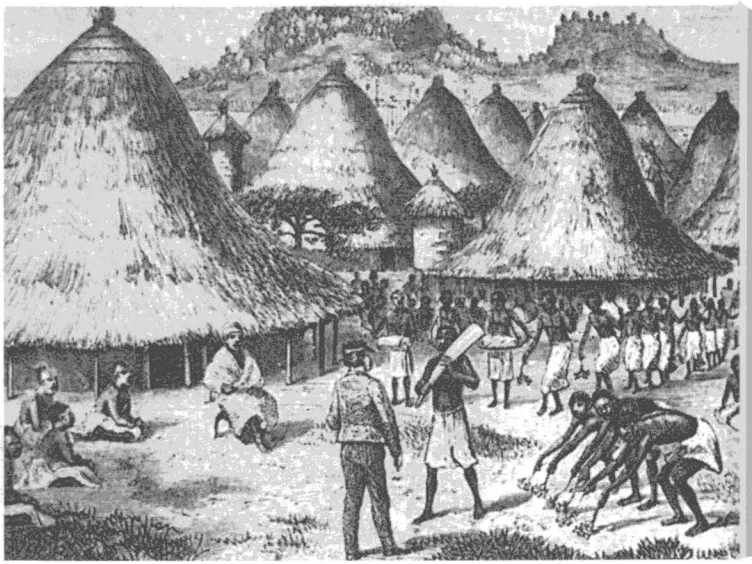


View of town and harbour of Macao in 1840

Germany's colonial politics started as late as 1884 under Bismarck. The few colonies were a product of colonial apportioning and yielded only small economic profit. By 1919 the brief era of colonialism ended for Germany.

Events and conflicts

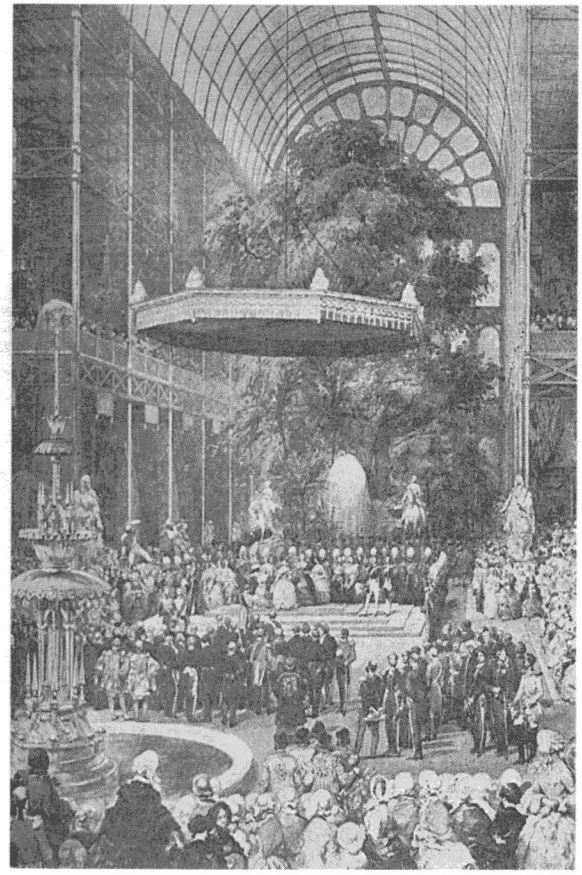
One of the most important events for International trade was the abolition of the Navigation Act 1849. This law decreed by England in 1651 said that only English ships could call at ports in the British colonies. Equally all merchandise whether for import or export had to be distributed via English ports even when the goods were destined for another country. This form of trading restriction coupled with often high prospective duty is regarded as mercantilism and was also practised by other states. Free trade as a mutually open system was also introduced during the first half of the 19th century by England and also by the United States. With the abolition of the Navigation act in 1849 all British ports were opened for foreign dealers and ships. Considering the size of the British empire and its preeminent economical standing this was of enormous importance for trade. Equally great was its model function for other states which were no longer



⚓ Chitapangwa welcomes one of the best known African researchers and missionaries-David Livingstone.

able to resist the free trade.

In 1859 the construction project of the century and milestone in shipping was started. Based on the drawings of the Austrian Negrelli and under the management of the Frenchman Lessops the Suez canal was built over a period of ten years. The opening in 1869 marked one of the most important turning points of International trade. The lockless canal cuts through the Isthmus of Suez between the Mediterranean Sea and the Red Sea. With a length of 173 kilometres and a depth of some 14 metres it connects Suez and Port Said. Due to the canal the sea route from Europe to Asia is almost halved and also the dangerous and time consuming route around the Cape of Good Hope became unecessary for the Far East traveller. British colonial politics were greatly influenced by the Suez Canal. In order to secure the sea route many territories were annexed including Egypt in 1882. To the present day the Suez Canal has remained a political bone of contention even though its political importance has diminished.



Queen Victoria opens the first World exhibition at the London Crystal Palace in 1851.

⚓ The Drake Well in Titusville, Pennsylvania. It was the largest oil spring in the United States (1859).

The most important events from 1853 to 1884 were:-
The occupation of the Danube principalities by the Russians leads in 1853 to the start of the Crimean War. Russia fights against Turkey and France and Great Britain enters the war on the side of the Turks. In 1854 an American naval squadron forces the opening of Japanese ports. In the following era of 1855 Alexander II becomes the Czar of Russia and the famous explorer and missionary David Livingstone crosses Africa and discovers the Victoria Falls. His travels and those of other explorers arouse great interest in Africa throughout Europe. In 1856 the Paris Peace Treaty terminates the Crimean war, parts of Besarabia go to Turkey and the Black Sea is neutralised. Russia loses its pre-eminence to France. In Africa the Boer freestate off Transvaal is founded. One year later the British and French start the Lorcha War against China and occupy Canton. Following rebellions the East India Company is wound up in 1858 and a Viceroy appointed by Great Britain takes over British rule in India. Due to the Peace Treaty of Tientsin, China is forced to open several ports for European ships. In 1859 France conquers Saigon in Indochina and Russia subjugates the Caucasus. Mineral oil production begins in the United States and Russia. One year later England and France occupy Peking and force China to ratify the Treaty of Tsientsin.

France and Great Britain decide to abolish the protective duty by way of trade treaty and introduce a most-favoured clause. After secession of eleven southern states and the formation of a confederation the Secession Civil war breaks out in 1861 between the Northern and Southern States. In 1864 the Northern states win the war due to their great technical and industrial superiority. Slavery is abolished in the United States. In 1866 Prussia goes to war with Italy against Austria and the German confederacy. With Austria losing the war, this means the end of the German confederacy. Austria separates from Germany and Venice becomes part of Italy. In 1867 Canada becomes a British dominion. Maximillian, Archduke of Austria and emperor of Mexico since 1864, is captured and executed by the former president Juarez after his retreat of the French troops. Mexico once more becomes a republic under President Juarez. In 1868 William Gladstone, the leader of the Liberals, becomes British Prime Minister. In Japan the power of the shoguns ends and the newly appointed Emperor starts the 'europeanization' of Japan. In 1870 war breaks out between France and Germany. Germany wins the war in 1871 and occupies Paris

Czar Alexander II of Russia - 1818 to 1881. Russian emperor from 1855 to 1881. Assassinated by a bomb.

In Versailles the German Empire is founded under Chancellor of the Reich Otto von Bismark and Emperor Wilheim 2nd. Due to its defeat France loses its preeminent position to the German Reich. During the same year the neutralisation of the Black Sea is cancelled. The famous meeting between Stanley and Livingstone takes place in East Africa. In 1874 the conservative Benjamin Disraeli becomes British Prime Minister. Annan Tonkinh became a French protectorate. In 1875 war breaks out between Egypt and Abyssinia which is won by Abyssinia in 1879. In 1876 Queen Victoria of England is proclaimed Empress of India. In the following year war breaks out again between Russia and Turkey. The Russians advance as far as Constantinople. Great Britain annexes Transvaal Freestate. In 1878 the Balkan states gain independence. Turkey cedes Cyprus to England. In 1879 the Saltpeter War between South America and China commences and is eventually won by Chile in 1884. One year before the death of Disraeli, William Gladstone becomes British Prime Minister for the second time. Tunis becomes a French possession and Italy begins the conquest of Eritrea. In 1881 Italy conquers Somaliland and during the following year Egypt becomes a British Protectorate. In 1884 the first German colonies are established in South West Africa including the Cameroons, Togo, East Africa, New Guinea, the Bismarck Archpelago and the Marshall Islands.

From 1871 first Reichs Chancellor of the German Empire founded by him. Dismissed by Emperor Wilheim II. in 1890.

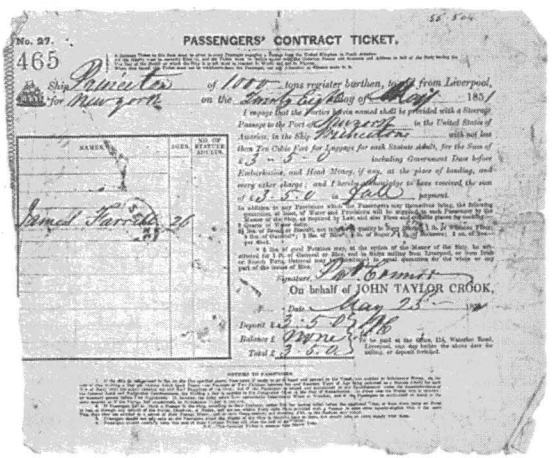
⚓ Prince Sovereign Otto von Bismarck, 1815 to 1898.

The Flood of Immigrants

From 1846 to 1855 over two million people sailed across the Atlantic to the West. This amounted to nearly half as many as in the seventy years from the time of the Independence declaration to 1845. Most of these immigrants were impoverished people without civil rights. They fled from political upheavals and famine in the hope of starting their new life in a homeland, worthy of human beings. But business people and tourists made this journey too.

For most of the passengers this sea journey was to become a time of hard tests and great misery. On the mail boats there were so many people pressed together that undernourishment and illnesses occurred more and more frequently. This state of affairs improved only with the introduction of the steamships which with effect from the middle of the 19th century enticed the passengers away from the mail boats. As long as the immigrants crowded on the mail boats the crossing became a real nightmare for many.

On average such a journey took 35 to 40 days, but often twice as long in bad weather. The immigrants were accommodated between decks, normally up to 800 people on a 1000 ton ship. One has to imagine the steerage as a dark smelly room which due to the large number of people caused agoraphobia. The ships bottom was sometimes positioned so low within the cargo space that water ingressed through the planks. Rats were a familiar sight and fresh air came only through the hatches. However in bad weather these hatches were frequently tightly closed causing stench due to lack of ventilation.


No. 27. PASSENGERS' CONTRACT TICKET.
465
Ship Princeton of 1000 tons register burthen, to sail from Liverpool, for New York on the Twenty Eighth day of May 1851
I engage that the Parties herein named shall be provided with a Steerage Passage to the Port of New York in the United States of America, in the Ship Princeton with not less than Ten Cubic Feet for Luggage for each Statute Adult, for the Sum of £3 - 5 - 0 including Government Dues before Embarkation, and Head Money, if any, at the place of landing, and every other charge; and I hereby acknowledge to have received the sum of £3 - 5 - 0 in Gold payment.
NAMES | AGES | NO. OF STATUTE ADULTS
James Harrold 26
Signature Thos Emmet
On behalf of JOHN TAYLOR CROOK.
Date May 23 1851
Deposit £ 3 - 5 - 0
Balance £ None
Total £ 3 - 5 - 0

A ticket from the year 1851 for a journey between decks of the "Princeton" from Liverpool to New York at a price of £3.5.0 which for many represented half a years wages.

the generation of the smell. The hygienic devices, of which there were hardly any or very few, became even worse.

Even whilst asleep, the steerage passengers were not able to forget the daily inconveniences. Sleep hardly came into consideration on 1.80 metre long bunks, which were arranged in two or three tiers, one on top of the other. The bunks were 45 centimetres wide, or also 1.80 metres wide, whereby more than four passengers often then had to be accommodated in one bunk. As the main deck was off limits during stormy weather, the conditions became even more aggravated. To make matters worse, clothing and the bedding was, for the most part, wet through, as the hatch covers were not closed in time when the storms began and waves lashed into the steerage area. Generally, nothing dried until the end of the voyage, so everything remained damp and smelt accordingly.

⚓ One woman collapsed in a steerage deck full of sick passengers. A wood engraving in an edition of "Harper's Weekly" dated 1869, which pilloried the conditions on packet boats.

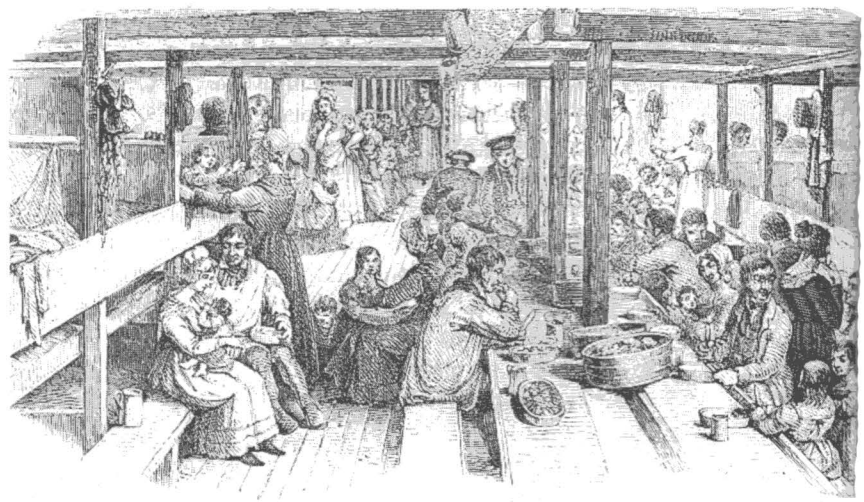
After the conditions in the steerage area and the situation of the passengers leaked out to the public by various investigations, Parliament felt compelled to pass the Passenger Ship Law of 1848. A minimum space requirement was now stipulated for each passenger. However, shipowners and captains took no notice of this law for economic reasons.

Precisely at a time when rigid rules were laid down for relationships between sexes, on the majority of the emigrant ships there was not even separate areas for men and women.

With crowds of people pushed together in small spaces, smells and dirt could not be avoided. On one occasion a Canadian government inspector found during investigations on the mail boat "Lady MacNaughton" that the few vacant spaces between decks were filled with " ship biscuit leftovers, bones, rags and all types of rubbish, all rotting and full of maggots. The stench was considered to be worse than the filth as one could shut ones eyes in order not to see the dirt, but the stench was ever present. The smell of rotting wood and that of earlier and new cargo intermingled with the odour of hundreds of people producing an unbearable stench. Hermann Melville, the author of" Moby Dick", remembers his time as a crew member on a transatlantic ship. When one week after sailing "one put one's head through the front hatch one could believe that one was placing one's head into a suddenly opened cesspit."

But not only stench and dirt caused the passengers between decks much trouble. For their health the completely inadequate food was surely more detrimental with which they had to exist for weeks and months.

On the worst ships up to eight persons had to share berths between decks. Worse still the berths were so close together sitting in the day was impossible.



⚓ On the better ships the Immigrants were offered tables and benches as shown in this artist's engraving from the " Illustrated London News".

A shipowner admitted openly that the normal diet was " adequate to prevent dying of starvation but not to survive and thrive." Small wonder, therefore, that on some ships ten percent of the passengers died on the sea. The surviving passengers were almost always undernourished when they finally set foot on land.

At the beginning of the flood of Immigrants the passengers had to bring their own food for consumption on board, but later a law was passed to ensure minimum rations were available. The shipowners and captains, however, found many ways to evade such legislation. It was for instance customary to have the required provisions on board at the time of sailing but to send back to land after sailing a large part of the provisions with the help of escort vessels. It also happened that food was sold to the immigrants at cut-throat prices instead of being distributed free of charge as prescribed.

A further difficulty was the preparation of food. On nearly all ships the cooking facilities were totally insufficient for the number of passengers. Often the facilities could not be used at all in bad weather. It can be taken from a contemporary report that often only six cooking facilities were available for 400 passengers.

A constant battle raged over the preparation of meals. Women travelling on their own often had no choice but to starve for days on end. Sometimes the ships cook would prepare meals for the Immigrants but demand payment for the privilege. Thus bribery became the only means of acquiring several meals per day. Poorer passengers without the required financial resources had to make do with one warm meal per day or even one meal every other day. An equally big problem was the drinking water supply. A law stated that each adult passenger was entitled to three litres of fresh water daily. Many ships, however, obtained their water from rivers and this was often not fresh. Furthermore the storage of water in barrels left a lot to be desired. According to legislation water was to be kept in clean barrels provided for the purpose, but in actual practice this did not occur. Consequently the water was often putrid and practically undrinkable upon distribution, and led to diseases such as cholera, smallpox and typhoid.

This caricature from 1833 shows America as a hostile wilderness and advises the Immigrant to turn back. Many potential Immigrants returned disappointed and in 1850 alone over 18,000 immigrants arrived back in Liverpool.

On some ships these diseases spread to such an extent that a captain recorded the following:- " It is a miracle, indeed, that so many survived the journey." Of course the immigrants were medically examined before going on board the ships, but these examinations were more than superficial and correspondingly useless. Feared more than other diseases was typhoid. This disease was widespread whenever many people stayed together and it became known as" jail fever " or " camp fever ". When the wave of immigration reached its climax and the number of typhoid cases on the ships increased dramatically, the disease was called " ship fever".

Despite all the difficulties, migration continued across the Atlantic to the land of promise, America, without diminishing. Fortunately the journeys were not always difficult. On some mail-boats the Immigrants formed self help groups in order to cope with the adversities of the journey. They cared for the sick, attempted to protect themselves against theft and helped women who travelled alone to resist encroachment from the crew and other passengers.

Around the middle of the 19th century some 250,000 people crossed the Atlantic on average and up to half a million during peak periods. The mail boats transported ambitious cargoes ranging from rails for railways to French wine. With the introduction of steam ships to the traffic across the Atlantic, mail boats became less viable. By 1863 steam ships had gained a 45% share of the passenger traffic and by 1866 the percentage had grown to 81%.

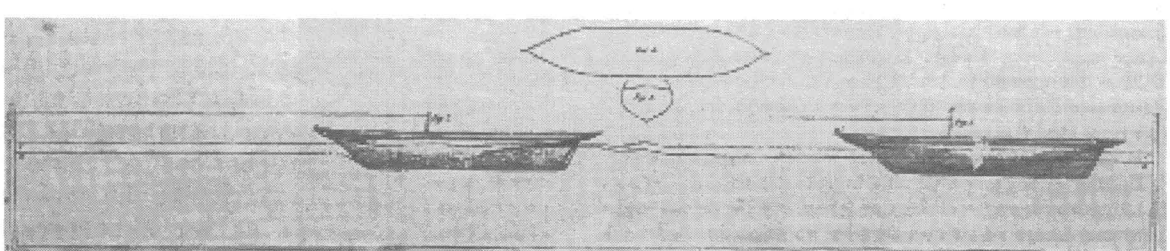
The mail boats managed to remain competitive for a while carrying heavy cargoes such as grain and coal. By 1878 however three of the five major lines had been shut down, namely the Red Star Line, The Blue Swallowtail Line and the Dramatic Line. The trail-blazing Black Ball Line ceased trading after the summer of 1878 and most ocean-going mail boats were turned into cash. On the 18th May 1881 the last mail boat arrived in New York. She was appropriate named " NE PLUS ULTRA " - No Further."

Shipping In The 19th Century

The Development Of Shipping
Fates Of Famous Ships
Basic Concepts Of Shipbuilding
Life On Board

The Development of Shipping

As strange as it may sound, the development of the proud clippers was not the only product of the 19th century. These fast sailing ships were the last link in a long history of development which began in pre-christian times. The ancestors of the clippers were not the ships of the Phoenicians, Egyptians or Romans but the narrow and fast boats of the Vikings. Many centuries of shipbuilding led finally to that perfection which helped to create the last and best sailing ships.
From the 17th century one can trace the theory of the construction of fast ships. From the middle of the 18th century water tank experiments were carried out with various models and around 1840 the brothers James and William Hall were engaged in model tests in a three metre long glass tank. A three centimetre layer of turpentine which was coloured red, was poured onto the water surface.
A scale model of a boat was pulled through the water by a weighted line running over a reel. Based on the movement of the red turpentine one was able to arrive at conclusions regarding the effects of various bow and stern shapes. By the use of different models with equal transaction weight it was possible to carry out efficiency comparisons. Today's drag tests are carried out in large plants and they are fully computer aided. But in the end this is merely a perfection of the test method which was used 300 years ago.



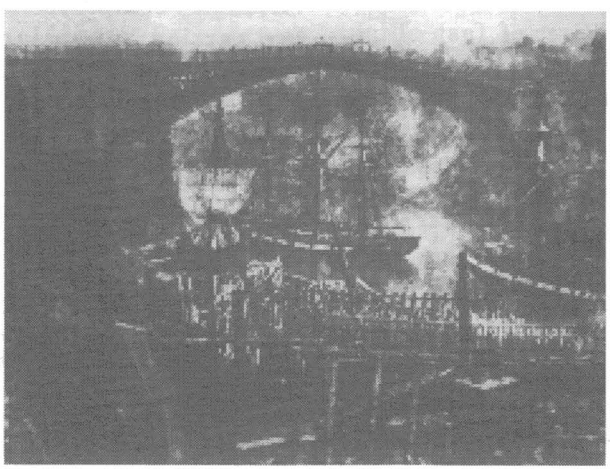
An illustration of the water tank tests of Hall & Sons from the year 1846. Published as advertising for the Aberdeen Bow model on right).

The Blackwell Frigates

After the shutdown of the East Indian company in 1833 and the advent of the steamships it became necessary to build faster ships. The ships used to date had simply become too slow and thus uneconomical. The shipbuilders were forced to change their views and to adapt their designs to the requirements of the time. The Blackwell Frigates, a newer faster type of ship were created and derived their name from the Blackwell dockyard of Green and Wigram. In 1837 the "Seringapalam" left the dockyard as the first ship of the new type. Although she had virtually the same length-width ratio as the East Indian vessels, there were clearly sharper lines and only a small poop. With the launching of the 1200 ton " Prince of Wales " in 1842 the new construction design had been used for the first time on a larger ship.

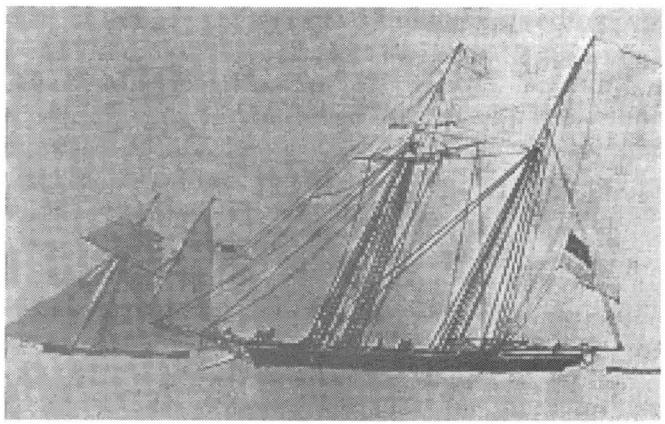
Blackwell Frigates were also built on the Thames, and in the North of England on the Wear and the Tyne. The two most succesful ships were built in the years 1846 and 1848 in the dockyard of T. & W. Smith on the Tyne. They were the " Marlborough" weighing 1402 tons and a length of 53 metres and the "Blenheim" 1314 tons. Both ships had flush decks without raised poop and deckhouse.

Compared with the clippers the Blackwell Frigates were still heavy and showed round lines. They were used for carrying passengers and cargo to India. Following the striking of gold in Australia and the correspondingly increased demand for passenger ships, the building of the Blackwell Frigates especially for the passenger traffic to Australia was



⚓ This photograph taken in 1858 shows a dockyard on the River Wear in Sunderland. The shipyards were mostly located on a flat strip of land below a steep bank.

started. The first clippers took away the importance for the fast passenger and cargo traffic from the Blackwell Frigates. Later they would become the preferred conveyance for cargoes where speed was of lesser importance.



⚓ This drawing from 1830 shows the beautiful rigging of a typical clipper.

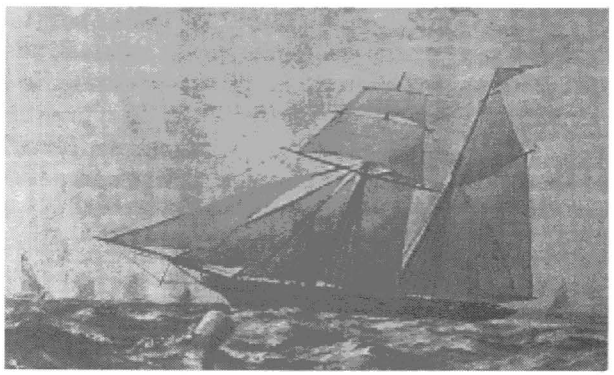
The Baltimore Clippers

During the Era of the Blackwell frigates, the Baltimore Clippers had their heyday. These schooners, built on the East coast of America, were considered during the first quarter of the 19th century to be the fastest ships in the world. During the war between the United States and Great Britain they were, therefore, preferentially used as privateers and blockade runners.

A typical privateer schooner possessed very sharp lines and a long outrun towards the stern. The continuous deck was almost free of super structures. Because of their superior speed they liked to invade British trading convoys, plunder them and sail away from the warships without great difficulty. It was only when unfavourable wind conditions prevailed that they could be captured by the ships of the British Navy.

After the war the Baltimore Clippers were used for the slave trade. From 1820 onwards the slave trade was classed illegal and opposed by the most important states. British ships cruised the coasts of Africa under orders to capture and seize slave ships. Thus, Baltimore clippers were used due to their great speed and ability to avoid these patrolling vessels. In fact due to their success rate, schooners of this type became the chosen vessel of the slave traders. The British Navy made great endeavours to

foil the Baltimore Clippers. New ships were built to incorporate many construction features of the Baltimore Clippers, and subsequently they became more succesful in their role. When slave trading was outlawed in 1850, the Baltimore Clippers lost their importance. They were unsuitable for use as normal merchant ships because of their limited loading capacity.



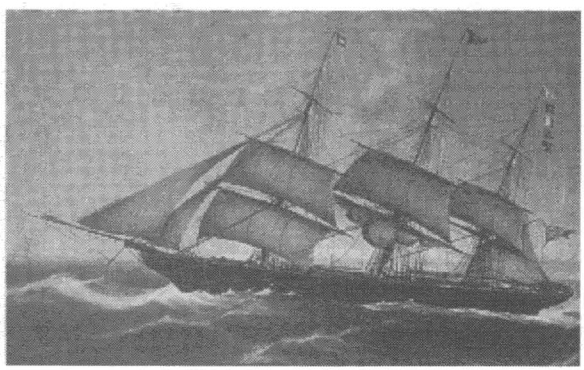
⚓ A painting of the "Non-Such". She was built three years after a similar ship, the "Scottish Maid".

The Early Clippers

The name Clipper for fast-sailing ships is still controversial. It is often misunderstood as a name for a definite type of ship. Generally speaking one may consider the fast sailing ships dating from the 19th century onward as clippers, independent of their construction and rigging. Primarily they were rigged and sailed with speed in mind. Loading capacity, running costs, comfort and safety were of lesser importance.
The demand for clippers resulted in enormous profits due to their fast and specialised transportation capabilities. In the first half of the 19th century this was offered by the opium and tea trade. The first landing of one season's tea yielded great premiums and the importers paid high freight rates for the first loads. Also for the gold finds in California and Australia around the middle of the century fast ships were needed. They were to take gold diggers and materials as quickly as possible to the places of discovery. The clippers did not represent a completely new concept but formed part of a tradition of continuing development and adaption to market requirements. Especially the shape of the hull of the ship was improved. The American

⚓ The " Bonita " with reefed lug sails shown on a painting by Arthur Smith. She was very similar to the " Reindeer " but the shape of her hull differed greatly from most ships of her time.

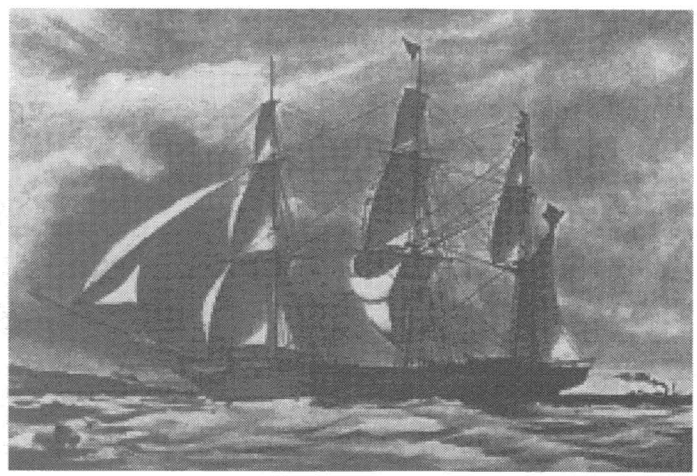
shipping historian Howard I. Chapelle wrote that "....on the clipper not one special feature was incorporated which would have been completely new.." Thus it was the combination and improvement of proven elements which made these ships so fast and successful.
During the period from 1840 to 1850 the American shipbuilders led their European competitors in the development of fast sailing ships. In America it was customary for the clippers to take gold prospectors to California around Cape Horn, to sail across the Pacific with Ballast and start the homeward journey to New York or Boston with tea from China. The fast clippers were especially suited for this journey. After the abolition of the Navigation Act 1849 American clippers were also used for the tea trade with England.
The best ships were built on the North East coast of the United States of the United States. They were in most instances built completely out of wood and lined with copper plate below the water line. A large number of these ships had three fully rigged masts. They had a greater length/width ratio than the ships of that time. Due to the great demand for fast ships and the reputation of the American shipbuilders many British shipowners ordered clippers from the United States yards.
In Great Britain the reorganisation of tonnage dimensions led in 1836 to a rethink concerning ship construction. One thought was to keep the rudder action as low as possible by corresponding construction of the ships hull. James and William Hall from the Alexander Hall & Sons dockyard in Aberdeen developed a type of ship which according to the new dimensioning rules even resulted in a saving of steering action. The most outstanding feature was the so-called Aberdeen bow, an extremely wide stern which jutted out. The first ship of



this new design was the "Scottish Maid" built in 1839. By and by the proven Aberdeen Bow also influenced by the construction method of the other British shipyards and many smaller excellent clippers were developed.
However, when in 1854 another system of tonnage dimensioning was introduced, the Aberdeen bow lost its importance and was ousted by the less extreme clipper bow.
The British clippers around 1850 were smaller than the American ships, but they represented the English fast sailing ships of the next quarter of a century.

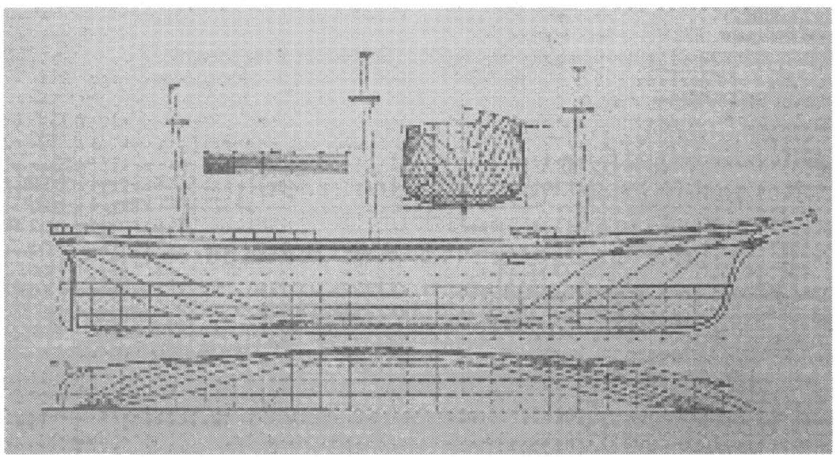
The heyday of the clippers.

Around 1850 the need for shortest possible delivery times emerged in all trading areas. Therefore, fast ships could obtain high freight rates. Resulting from this was a correspondingly great demand for fast clippers with adequate loading capacity. Even when in most publications the peak of the clippers is considered to have occurred during the time from 1860 to 1870 more extreme clippers were built from 1850 to 1855 for the greatest number of application ranges than would ever happen again. During the Crimean War a record number of new ships were built and in the year 1855 steam ships and sailing ships with a total tonnage of 323,200 were constructed. But only a low percentage of this applied to clippers. Towards 1860 the number of newly built clippers decreased greatly although an exception to this rule were the tea clippers.

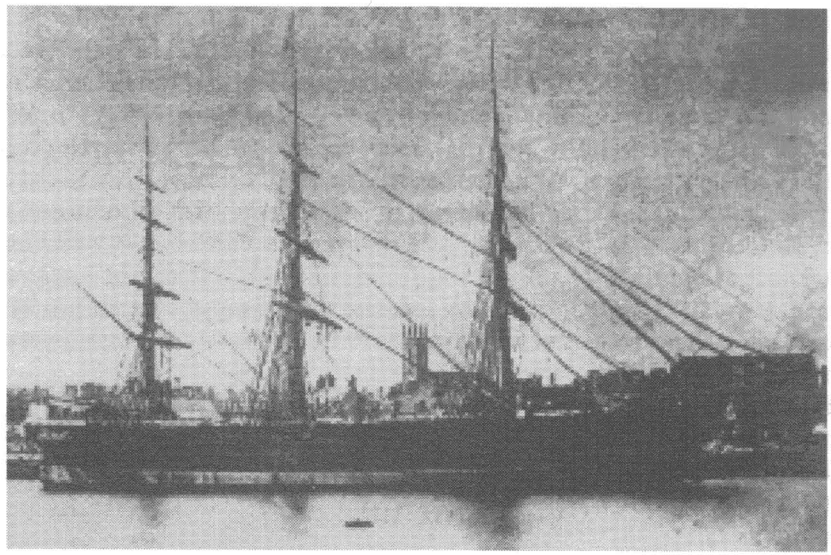


⚓ The "Swordfish" was built in 1854 by Joseph Cunard in New Brunswick. The illustration provides a comparison with the Aberdeen clippers of that time.

The gold finds in Australia had great influence on the development and distribution of clippers, particularly in England. A letter by G.H.Heaton, captain of the "Thomas Arbuthnot", points to the conditions in the port of Sydney. The letter was printed in the "Times" on the 10th September 1851.
It Read as follows:-
"Gentlemen, I assume you know of the rumours about the discovery of extensive gold fields in New South Wales which brought about an upheaval of a kind which in my opinion can afflict a country. The colony is completely paralysed. Each man and each boy as far as he is able to hold a shovel goes to the gold fields if he is not there already. Many places of work are completely deserted. The consequence of this is that sheep and cattle are abandoned. The prices of almost all foods have risen by about 200% in some cases and when one thinks of the next grain harvest which will greatly fall off because of the lack of labour then it is clear that the means of subsistence for man and beast will become very scarce and dear. No doubt a wave of immigration will commence in all parts of Europe as soon as the news has gone round.



⚓ The 1,836 t fully-rigged clipper "Comet" managed to make the journey from Liverpool to HongKong in only 83 days and 21 hours. She was built in 1854 by William H.Webb.

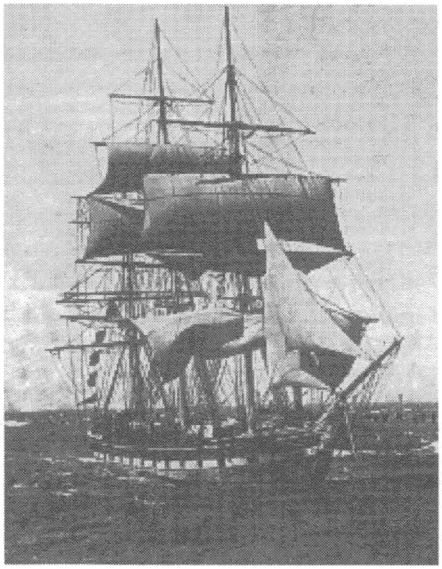


⚓ With the 2,492 t "Schomberg" the Hall brothers of Aberdeen proved that they were also able to build clippers to match those of Donald McKay's Boston yard. The photograph shows the mighty ship almost nearing competition in the port of Aberdeen in the summer of 1855.

We have Australian gold aboard to the value of £800 which is the first gold shipped out of the colony. It was purchased by four gentlemen, managing partners of different merchant firms in Sydney, on site.
The gold consisted of lumps of almost pure gold and the largest lump was just short of four pounds by 2 ounces. When this lot was taken to the ship much more gold was lying in Bathhurst awaiting a military escort which it was hoped would be authorised by the Government. The gold we have abroad was brought here by four gentlemen armed to the teeth.
I had great difficulties getting away from Sydney. Although I had doubled the wages of the crew, six or seven men left as soon as this matter became known. Anticipating what would probably happen I arranged for a tugboat to tug the ship to the "Heads" .
Day and night I positioned an armed policeman at 'each and every end' of the ship. Nevertheless the swimmers still managed to get off. All measures taken caused great expense. When I put to sea, the " Lady Clarke " remained behind ready to sail, without a soul on board but the

captain. I think that - carrying his mustering roll in his pocket - he was on his way to Bathhurst thinking that he would be able to persuade some sailors to return to the ship to be mustered.
The sailors who had stayed on in Sydney demanded £ 80 for the journey back and the guarantee that a ship would be provided for their immediate return to Sydney. I paid five to six pounds per month for the men that I required.

Yours very faithfully,
sgd . G . M. Hamilton."

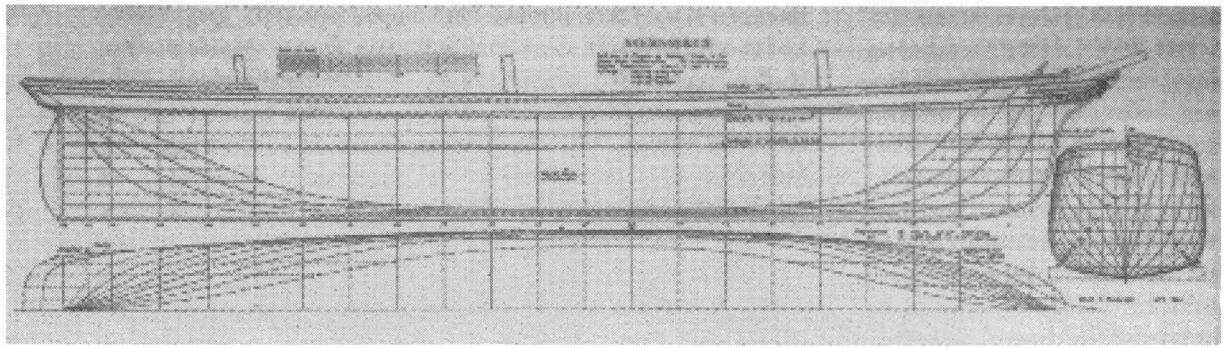


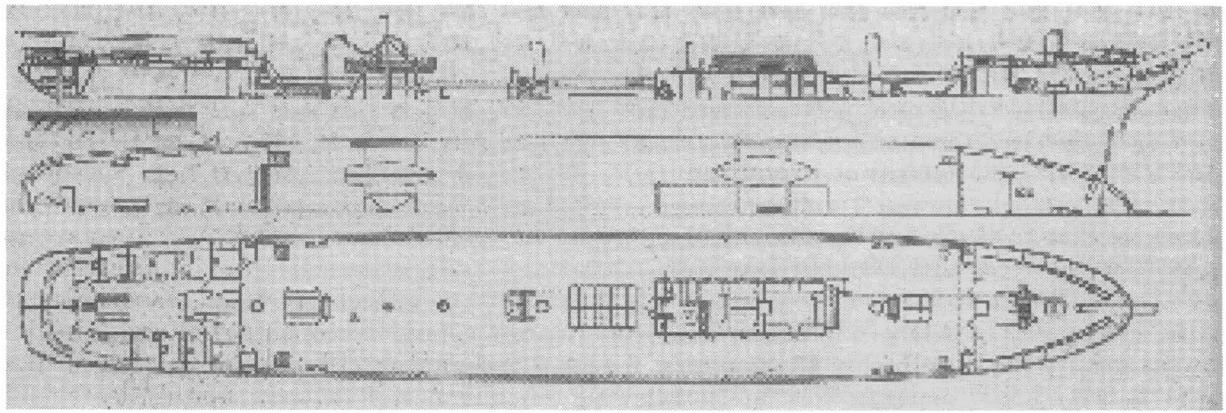
⚓ The fully rigged iron ship " Golden Fleece " putting into the port of Le Havre.

⚓ A lines plan of the 1.671 t fully rigged ship "Mermerus" . She was built in 1872 in Glasgow by Barclay, Curle & Co.

⚓ Deck plans and longitudinal section of the "Mermerus" .

A huge migration wave to America commenced and the shipowners foresaw business opportunities. In the following year the most extreme clippers to leave the dockyards of Britain were built. These Australian clippers required fine lines for the journey across the Atlantic but they also had to permit the use of sails during storms in the " Roaring Forties " At this time the first clippers appeared. The length-width ratio was increased to 7:1. The masts became higher and amounted to almost two thirds of a ships length. Usually they were equipped with fully square sails and provided a sail expanse of up to 3,000 square metres with three masts. Towards the end of the century fully rigged ships with up to five masts appeared and in exceptional cases had even six or seven masts. From 1860 onwards the best ships hulls were made of Iron.
The end of the big time of the clippers came with the opening of the Suez Canal. Due to the "stinking ditch" as the canal was unkindly called by the sailors the Eastern route became also profitable





for the steamships. The same consequences emerged due to the opening of the Panama Canal. Although it would still take until the end of the 19th century before the steamships would outnumber sailing ships, the end of sailing vessel shipping was in sight.
A final upsurge in sailing vessel shipping was experienced at the beginning of the seventies but the sailing ships could no longer keep pace with the rapid development of the steamships. The only clipper to survive was the "Cutty Sark" and she can still be seen as a relic of a past epoch in a dry dock in London.

The American Schooners

Around the middle of the 19th century an increasing number of steamships were used by America for coastal trade. The sailing ships were then utilized for the transportation of heavy and bulky cargoes such as grain, building timber, coal, cotton and various building materials. This resulted in an increased demand for bigger schooners able to transport this merchandise economically. Up to the year 1870 mainly three-mast schooners with a tonnage of 1,000 were used. Their construction was influenced by the American mainyard clippers. Since they had been designed specifically for special routes and cargoes, with low building and running costs compared with the steamships and necessitating a small crew only, they were quite capable of competing with the steamships.
From 1870 onwards shipbuilding switched to large schooners. Most frequently four-masters up to 1,500 t were built. Five-masted schooners above 2,000 t also proved popular and were built mainly with the overseas trade in mind. Barring a few exceptions these schooners were completely made of wood.

The Steamships

The combined steam/sailing ship "Savannah" managed in 1819 to cross the Atlantic for the first time under steam. Oddly enough this machine was operable for only 88 hours due to its heavy fuel requirements. The glory of the first crossing of the Atlantic with the aid of a steam engine belongs to the small steam ship "Sirius". After she had put to sea at Cork on 4th April 1838, she arrived at New York on the 22nd April with 40 passengers on board. She nearly failed to reach America when her coal stock ran out and as a

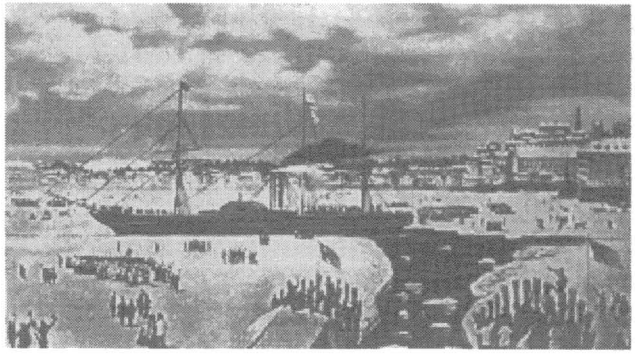
result the captain ordered the burning of the interior equipment and the rigging. This proved to be necessary since a few hours after the "Sirius" arrived, her rival the "Great Western" docked alongside.

The struggle for power between sail and steam lasted virtually until the turn of the century. Although the steamships were largely independent of wind and weather, they had numerous shortcomings. One of the greatest problems was their enormous fuel requirement. Due to the large quantity of fuel needed the running costs of the steamships were much higher than those of the sailing ships. The opening of the Suez Canal and the Panama Canal substantially reduced this disadvantage.

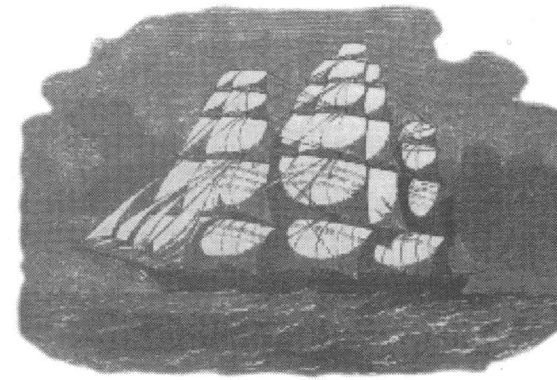
Power derived from paddle wheels was a further weakness of the steamships. Due to the consumption of combustible material the ship rose ever higher out of the water. The paddle wheels then failed to reach their optimum immersion depth and the ship noticeably lost more power. In heavy seas the paddle wheels dipped irregularly and the controllability of the ship was greatly impaired. Often the paddle wheels were severely damaged by the action of waves. It was common place for steamships to drift along on the high seas for days in such a condition.

The introduction of the propellor which eliminated the disadvantages of paddle wheels proved to be a great step forward in nautical development. But even this new innovation there were still obstacles to be overcome until mature conditions were completely attained.

For a long time the steamships were mainly used for coastal trade. It is true to say that there were some well-known atlantic-crossing steamships, but the majority only navigated short distances near the coast.



⚓ The steamship "Britannia" of the Cunard Steamship Company leaving Boston Harbour. In 1840 Cunard started their transatlantic line with steamships.



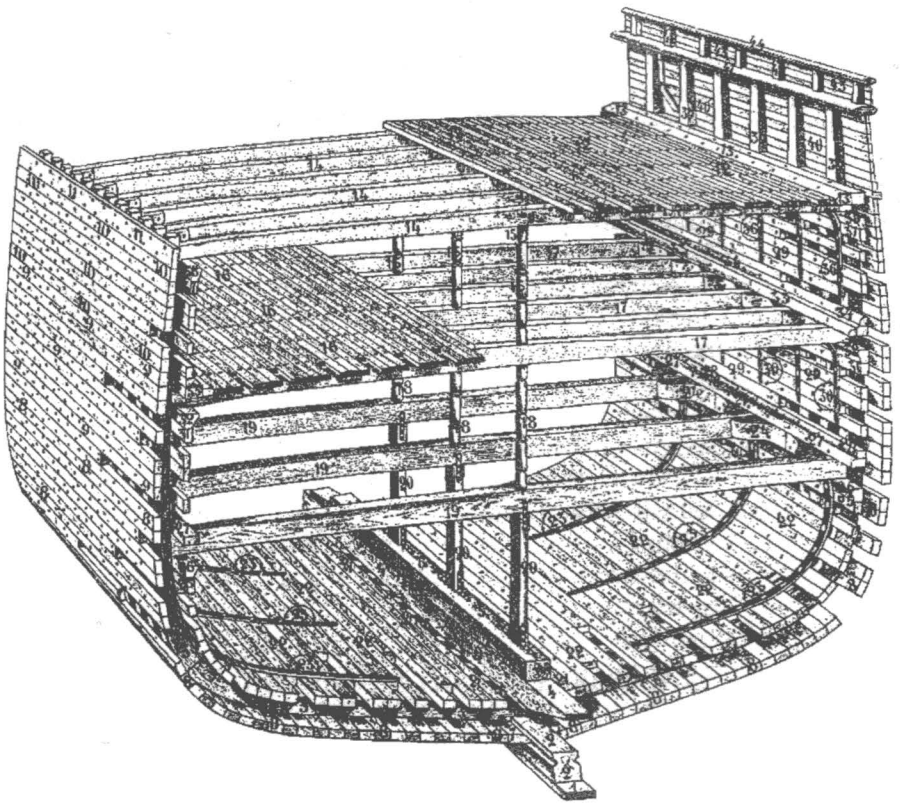
⚓ The gigantic clipper " James Baines " used as a troop carrier on her way to India. Built by the Boston shipbuilder Donald McKay.

Only after the opening of the Suez Canal and the Panama Canal the big hour had struck for the steamships.
At last they could be profitabley used for the Eastern voyages and for shuffle traffic along the Western and Eastern coasts of the United States. In spite of everything there was only a tonnage of 3.5 millions of steamships compared with an 18 million tonnage worldwide in the year 1880. The demise of the sailing ships loomed but did not actually take place until the end of the 19th century. In the year 1900 the turning point was reached and compared with 16,000 steamships with a registered tonnage of more than 22 million worldwide there were only 12,000 sailing ships left with a total registered tonnage of 6.5 million. Within a century steam power had ousted the sailing ships which had dominated for thousands of years.

Wood as a Burning Material

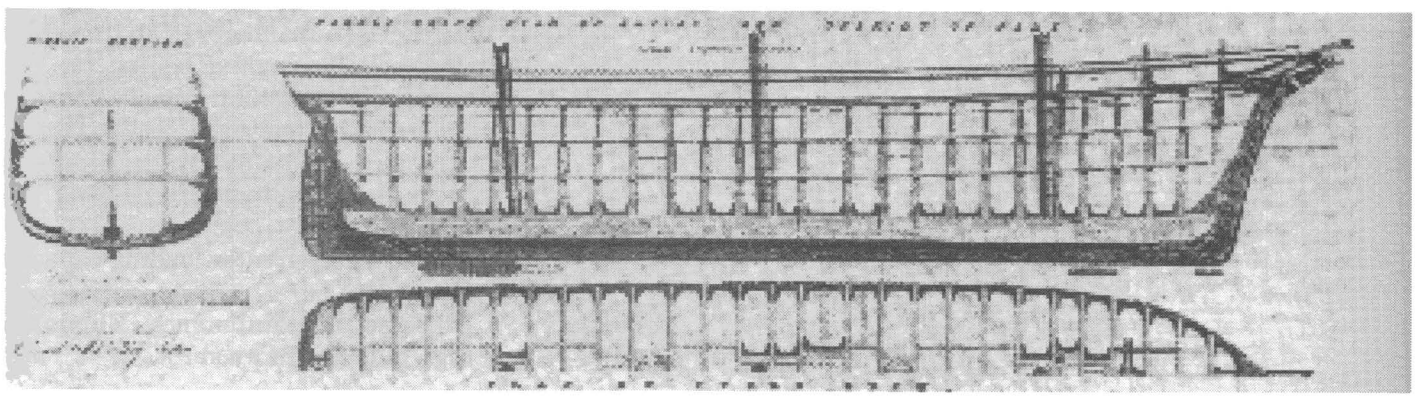
For centuries wood had been the material traditionally used in shipbuilding. The art of wood processing for shipbuilding had been perfected based on long tradition and experience. Oak wood was considered most suitable for ships. For the building of a ship huge quantities of wood were required. At the beginning of the 19th. century one tonne of wood was used per ship's tonne. In the case of warships the wood requirement was double. Half of the wood, however, was lost during processing. Especially in Britain good wood for ships became very expensive in the 19th, century as the native forests had been depleted. Therefore, the British were forced to import oak wood from Canada or the Adriatic countries. It was, therefore, not surprising that iron ships increasingly gained importance

⚓ Cross section of wooden vessel.



⚓ Large wooden ships required a massive construction. This section of Donald McKay's 67m long 2,050 t fully rigged ship " Chariot of Fame " emphasizes this.

in Britain.
For large ships massive wood thicknesses were required in order to obtain the necessary strength of the hull.
The larger the ship, the bigger the " forest " of spatial supports, side keelsons and suspension elbow braces. Stowing of the cargo, therefore became a considerable problem. Accordingly it was soon decided to use iron for elbows, beams and spatial supports. Due to the higher strength of the material it was possible to save space. This method was mainly applied in Great Britain whilst the Americans continued to build their ships nearly exclusively out of wood. As a result the American ships tended to be somewhat larger than the British ones. Whilst the English built few wooden ships over1,000 t around the middle of the century, so many large wooden ships were launched in America that the launching of a such ships were hardly taken notice of. The largest and most sensational ship built in America was the" Great Republic ". She was originally designed for 4,555 t but following a fire shortly after completion she was modified to provide a tonnage of 3,357.

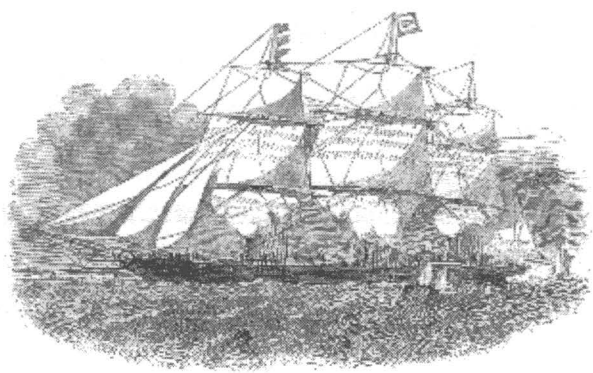


Many English shipbuilders bought ships from the United States or Canada during the time of the boom around 1850.
The English dockyards had the advantage that they did not have to cater for larger ships so that there was still a demand for their similar ships during the subsequent depression.

Ships Made From Iron

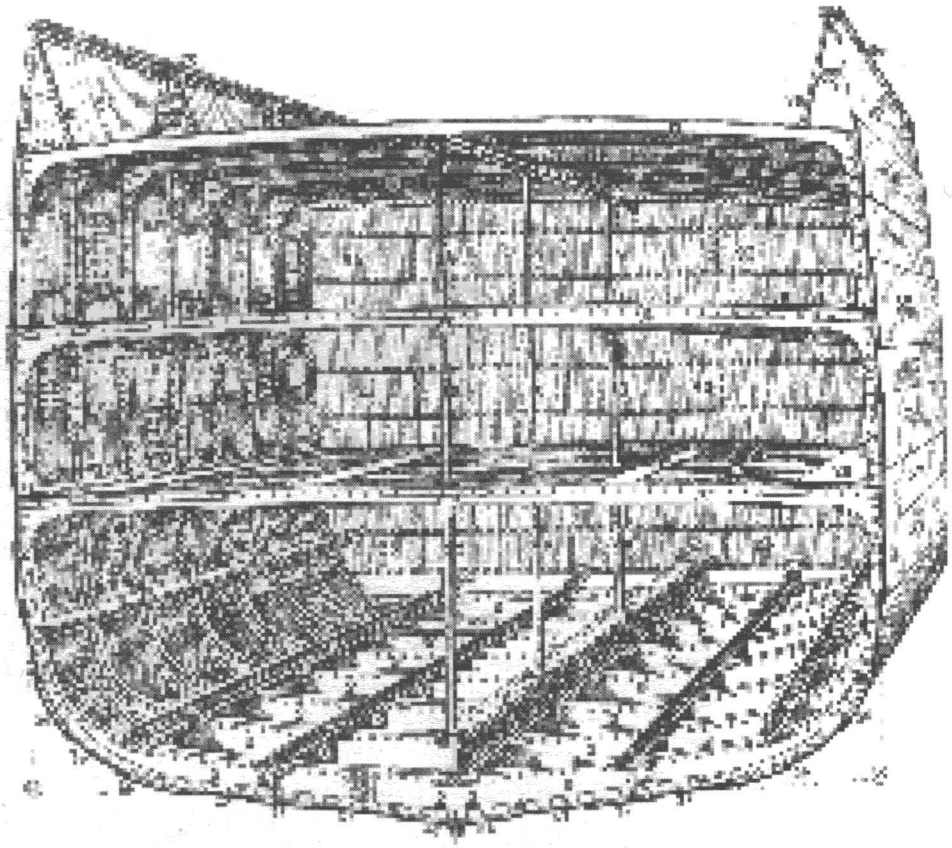
As with any other technical innovation, iron needed some time to prevail on the market as a material for shipbuilding. Iron had been used in wooden vessels for supports, elbows and beams. Regarding the fully-rigged iron ships most shipowners were very sceptical in the beginning. Moreover, the manufacture of ships from iron required re-thinking and traditional wood shipbuilders were not suited to the task. Accordingly the art of shipbuilding was mainly developed by former mechanical engineers.
The advancement of the iron ships proceeded slowly but irresistably around 1850. More and more shipowners allowed themselves to be convinced regarding the advantages of this novel construction method. The shipbuilder Alexander Stephens Jr. described in 1858 the essential advantages of an iron ship in listing the following five points:-

1. Prime cost lower than that of a ship made of wood of the same class.
2. In many ranges of voyages iron ships offered the advantage of ensuring safer transportation.
3. Considerably greater loading capacity.
4. Durability.
5. Efficiency in maintenance. Elimination of high bills due to wood rot.

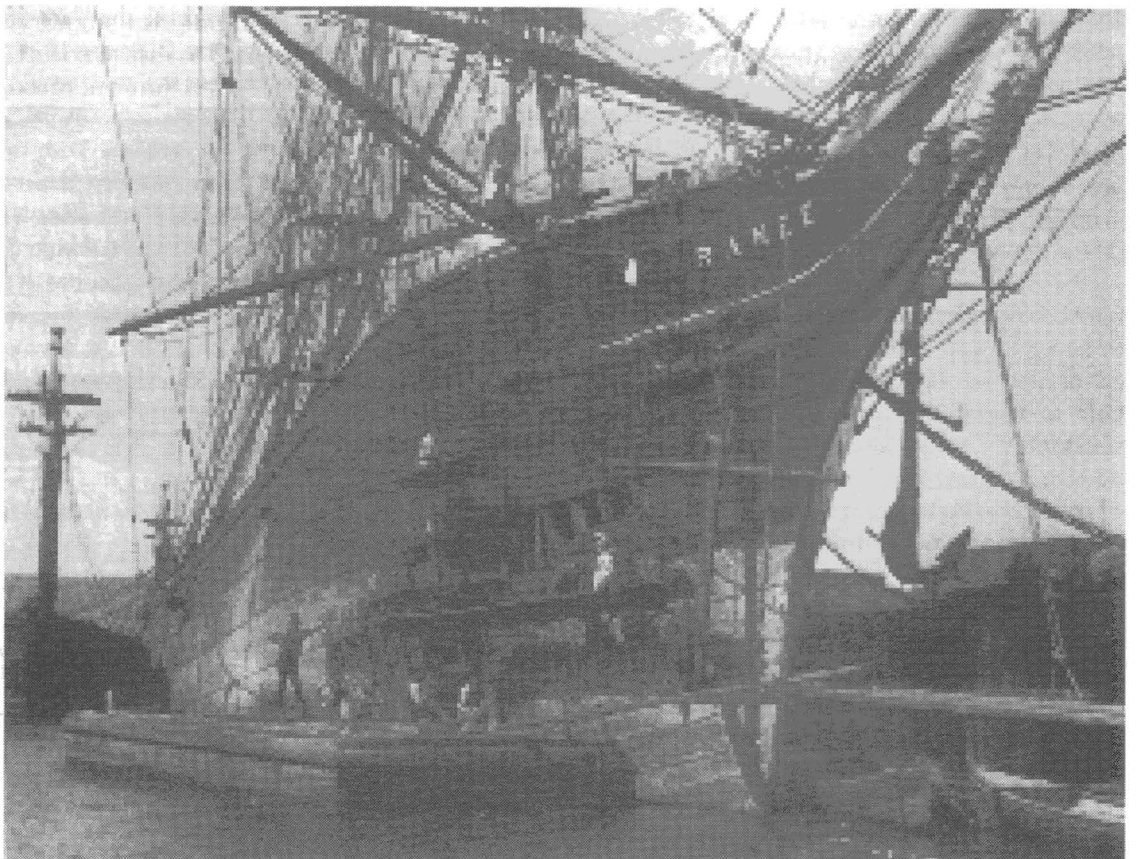


⚓ The magnificent fully-rigged iron ship "Gauntlet" was praised by the press in 1853 as "the most perfect of all clippers ever launched on the Clyde".

⚓ Cross section of metal vessel.



⚓ The 1,264 t "Ranee" in a dock in New Zealand, Individual plates were removed for repair. Shown are the very nice details of the iron cladding. The ship was built in 1864 in Liverpool.



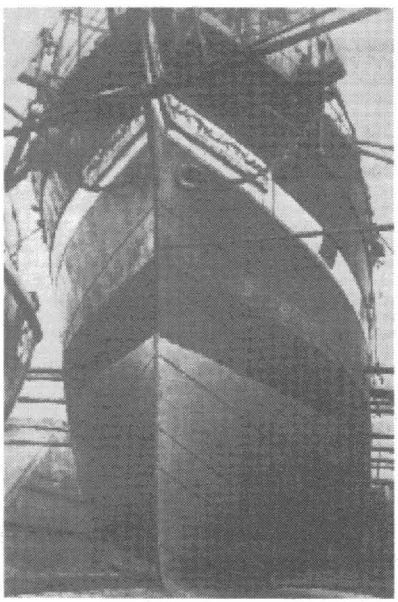
A great advantage was the increased loading capacity. Due to leaving out of many supports and beams which were required to give strength to a wooden ship more stowing room remained for the cargo. Also it was easier to stow the cargo than in the tangle of wooden hull supports. The wall thickness of a wooden ship were considerably thicker. Estimates revealed that compared with a 500 t capacity of a wooden ship a similar ship made of iron could carry 600 t.

A further considerable argument in favour of iron ships was their stability. An iron hull could withstand greater stresses than a wooden hull.

But iron ships had their disadvantages, too. Bilge water within the cargo space caused corrosion. A layer of Portland cement or asphalt was needed to prevent this. Difficulties with the ventilation of the cargo space contaminated many a cargo in the early years. A special problem was the deflection of the compass caused by the quantity of iron in the hull. Only the endeavours of scientists would eventually solve this problem.

An especially annoying and persistent problem was the fouling at the bottom of the ship. The iron of the hull seemed to attract sea pocks. Often sea pocks were removed by the tonne from the bottom of a ship in dry dock. Excessive fouling reduced the speed of a ship by three to four knots. In order to avoid this and to prevent more extensive damage an iron ship was put into dry dock once or even twice a year so that the hull could be scraped and provided with an anti-foul coat.

Due to the more easily attainable strength of the hull it was possible to build larger ships. In the case of Iron ships the length-width ratio was increased to 7:1. Although

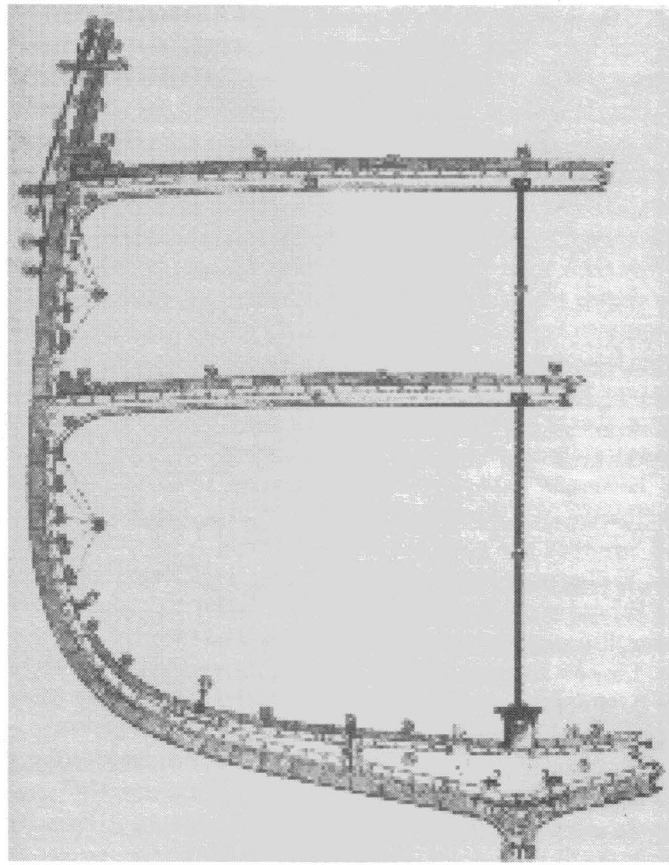


⚓ A front view of the 1,447 t fully-rigged iron ship "Rodney" in a dry dock. the individual runs of the iron plating can be clearly seen.

iron could never replace wood in the case of the sailing ships, it finally made the breakthough in steamships from 1870 onwards.

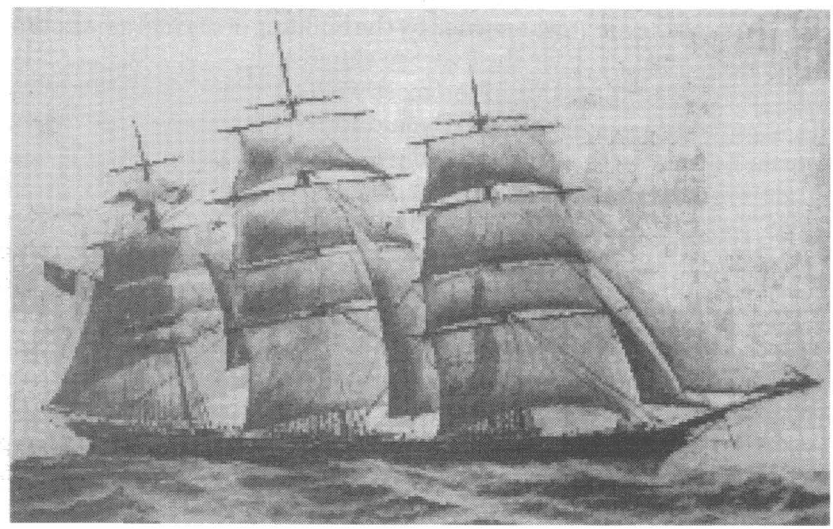
The Composite Clipper

An extremely unpleasant characteristic of the iron ships was as previously pointed out the fouling of the hull. Especially in tropical waters the iron skin was particularly badly affected. With wooden ships such fouling was largely avoided by copper plate protection. From the year 1840 copper was substituted by a copper zinc alloy which remained free of fouling for up to ten years. Iron ships, however, could not be mounted with copper since in salt water a galvanic corrosion occurs between iron and copper.
These difficulties resulted in the first trials of a composite construction which was to combine the advantages of both construction methods.



⚓ A section through the principle frame of a composite ship. The main construction consists of iron. Only for the outer planks and the deck planks wood was used. The outer planking was also lined with a copper layer.

The identity of the first composite ship can no longer be safely be established. In general the steamship "Assam" completed in India in 1839 was considered the first composite ship. During the course of the years many patents existed in this field. Each shipbuilder had his own designs. Such a ship consisted mainly of iron and only the outer planks were manufactured of wood. The wooden planks were lined with copper or brass. The bar keel was made from wood. A special skill was the fastening of the wooden planks with copper rivets which were not allowed to be in contact with the iron. From 1860 onwards many excellent ships of this design were built such as the "Taeping", the "Ariel", the "Sobraon", the "Thermopylae" and the "Cutty Sark". In 1861 the Lloyds Register Committee even granted a higher classification for composite ships which further contributed to their high reputation. They were excellent ships but they did have one disadvantage. They were so expensive to build that not every shipowner could to afford them. Thus they remained much noticed and praised but they could not oust either wooden or iron ships.



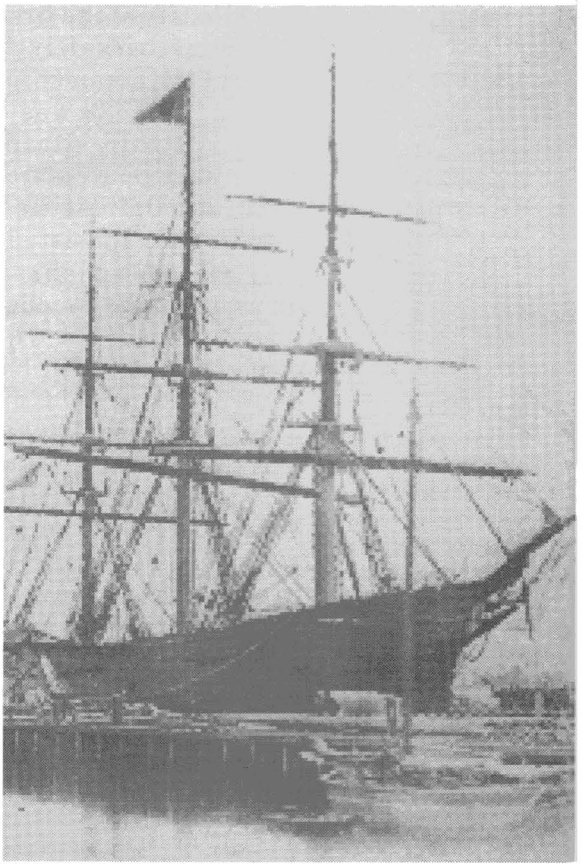
⚓ The 60 m long 879 t "Titania". One of the most outstanding composite ships from the Robert Steele & Co. shipyard in Greenock.

Shipyards and Shipbuilders

Shipbuilders and shipyards were as well-known in the 19th.century as the automotive manufacturers of today. Their products were noted and discussed. One must not forget in this connection that for practically every shipyard the main business consisted of the building of small ships well below 1,000 tonnes. Although we tend to read today about the large and fast sailing ships, the daily bread for each shipyard was earned by the building of normal small ships for the average shipowner.

One of the most well-known shipbuilders of his time was Donald McKay. His shipyard in Boston produced above average many famous and successful ships. McKay was not only a gifted shipbuilder but he was also one of the first to introduce machinery such as steam-driven tilting saws and lathes. These machines enabled him to reduce building time and keep his production costs low. His ships were well-known and respected everywhere and they were sold throughout the world. On the McKay shipyard the largest mainly wooden construction ship "The Great Republic" was built.

Some of the best known ships of Donald McKay



⚓ This photograph probably shows the 2,447 t "Champion of the Seas" in 1854 in the Boston shipyard of Donald McKay. Many first-class large clippers came from this shipyard.

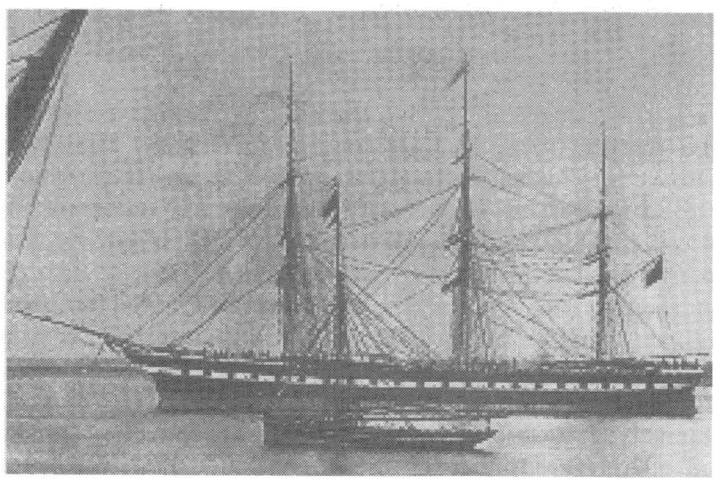
⚓ The largest composite ship in the world used for journeys to Australia was the 1,131 t "Sobraon" from the Alexander Hall & Sons shipyard.

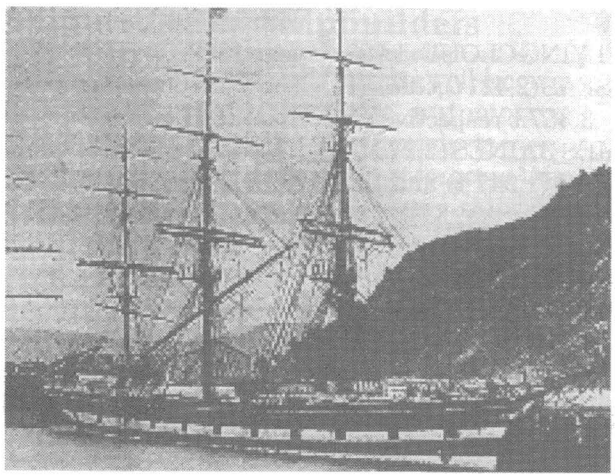
were the following:-
STAGHOUND (1,534 t), FLYING CLOUD (1,728 t), SOVEREIGN OF THE SEAS (2,421 t), GREAT REPUBLIC (4,555 t and 3,357 t respectively), LIGHTING (1,468 t), JAMES BAINES (2,275 t), CHAMPION OF THE SEAS (1,947 t) and the DONALD MCKAY (2,408 t).

Great Britain's most famous shipyard was that of Alexander Hall & Sons in Aberdeen. In 1830 the brothers James and William Hall took over the firm from their father. Their fame began with the building of the "Scottish Maid" in the year 1839.

She was completed in 1866 and sailed the seas until 1941.

She was the first ship with the exemplary Aberdeen bow. The new hull shape was to influence a whole generation of fast sailing ships. The ships of this design were very fast and yielded tax advantages since the new dimensioning ruling in 1836. During many drag tests with true-to-scale models in large glass tanks the Hall brothers perfected their new hull shape. The ships painted in the traditional "Aberdeen Green" enjoyed great popularity all over the world. During the second half of the 19th. century some of the best iron sailing ships also came from the Aberdeen shipyard. Well-known ships from this dockyard were the following:-STORNOWAY (527 t), CHRYSOLITE (440 t), CAIRNGORM (939 t), SCHOMBERG (2,284 t), REINDEER (965 t) SOBRAON (2,131 BRT) and the CALYPSO (1,061 BRT). In the port of Galveston in Texas one can





⚓ The iron clipper "White Eagle" built in 1855 by Alexander Stephens & Sons a sister ship of the much praised "Storm Cloud".

still admire to this day the only intact sailing ship of the Hall brothers. This is the iron bark "Elissa" with 430 BRT built in 1877.

This ship was restored at a cost of one million dollars and since 1982 has been sailing the seas in its original condition.

It would be too difficult to mention here all good shipbuilders of the 19th. century. But one must not forget the Alexander Stephens & Sons shipyard in Scotland. With the fully-rigged iron ship "Storm Cloud" a ship was launched in 1854 which caught all eyes. She was built in accordance with the plans of Alexander Stephens at the shipyards own risk. With a long, sharp and concave bow she was practically the transposition of the wave theory by Russell. In 1855 her sister ship "White Eagle" put to sea.

Another well known shipbuilder was William Rennie. He was co-owner of the shipyard of Rennie, Johnson & Rankine in Liverpool. Among his other ships the "Sappho" (359 t) and the "Fiery Cross" (688 t) set speed records. Despite these fast clippers the shipyard went bankrupt in 1855.

Some of the best clippers originated from the Robert Steele & Co. shipyard. These tea clippers were built especially for the China voyages and they achieved some of the fastest passages to and from China. They offered the advantage of sailing quickly in light winds as well as in strong ones. A tea race of "Taeping" against "Ariel" (both built by Robert Steele) made history. The best ships from this dockyard were TAEPING (724 t), ARIEL (853 t), SIR LANCELOT (847 t) and TITANIA (880 t) all of which were composite ships.

Fate of Famous Ships

Ships, and especially sailing ships, were credited with all possible and impossible characteristics, but never was a ship regarded by sailors as an inanimate object. Many stories about the proud sailing ships were told, some true and others invented. Each ship had a special fate, often a tragic one. Even though the ships themselves have disappeared long ago, their stories and fame live on. The life stories of some well-known ships are descibed in more detail as follows.

The Flight around Cape Horn

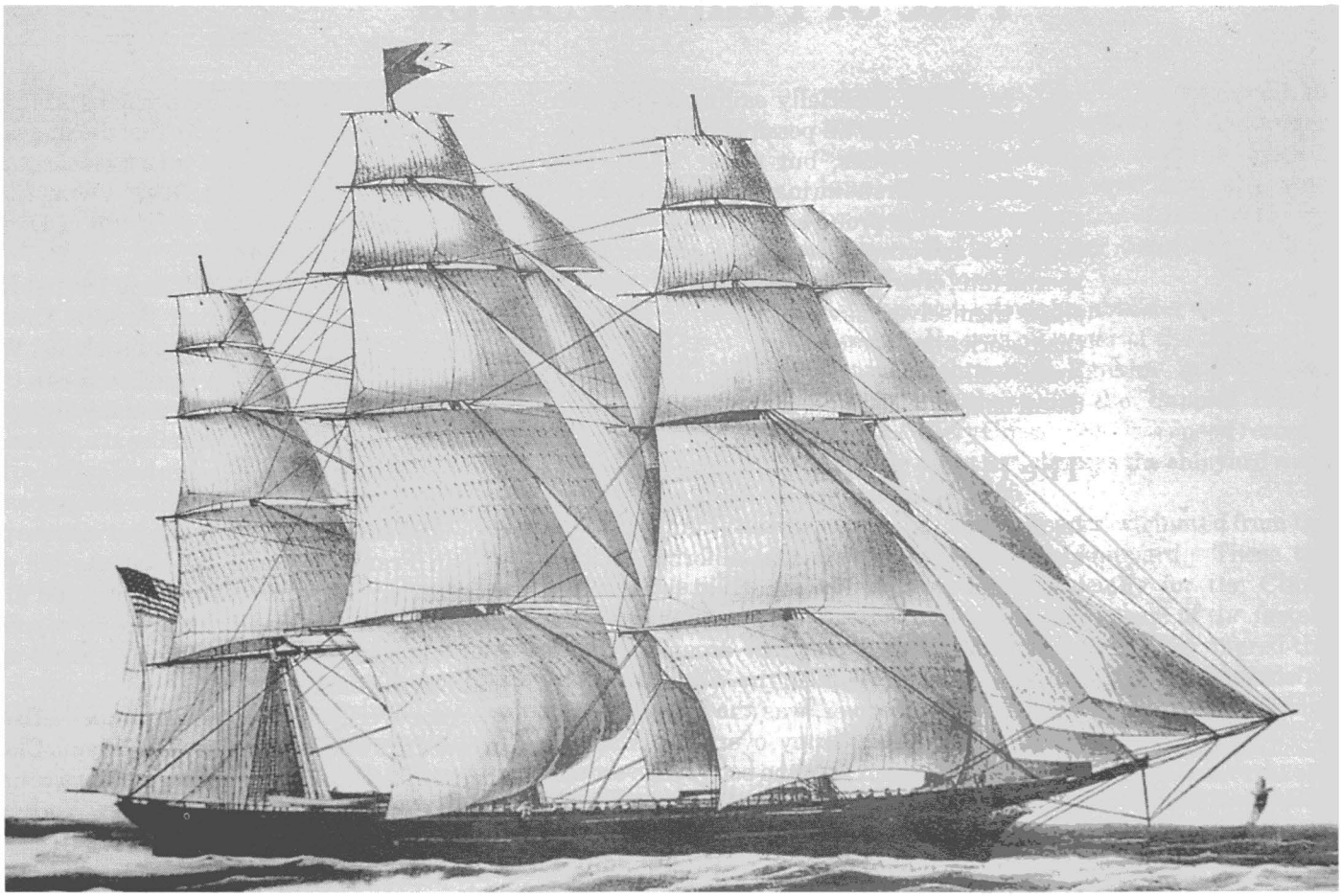
In the year 1848 the whole of America was alarmed by the news "Gold in California". Within a shortest possible time the gold fever seized everybody in America. Numerous sections of the population of the East coast dreamt of quick riches waiting for them on the West coast. The only obstacle, however, was the journey to the West. Since the journey over land was not practicable, this left only the sea voyage around Cape Horn. At the time of the gold rush innumerable ships were built for the transportation of people, equipment and provisions.

The fast ship "Flying Cloud" under full sail. She achieved the voyage to San Francisco via Cape Horn within a never to be beaten record time.

Such a voyage promised emormous profit and it was, therefore, small wonder that the shipyards were almost unable to cope with the orders. For exactly this purpouse the 1,783 t " Flying Cloud " was built in 1851 in the dockyard of Donald McKay in Boston.

She put to sea on the 2nd. June 1851 at New York under Captain Josiah Perkins Creesy. Heavy storms caused the ship problems. With fine weather restored, she reached a run (the distance covered per day from midday to midday) of an incredible 325 nautical miles at a maximum speed of 18 knots. No other ship had sailed so fast up to that day. With the absolute and unbeaten time of 89 days and 21 hours she put into the port of San Fransisco under full sail. As the gold diggers and the sailors, who also wanted to try their luck in the gold fields were in a special hurry, the sails were not reefed as usual upon entry in the harbour.

Some over-hasty people even jumped off board in order to avoid losing time. The "Flying Cloud" then crossed the Pacific Ocean, took on a cargo of tea in Canton and returned to New York as a proud record holder.



The Great Tea Race

The British had always been enthusiastic supporters of bets. This betting passion was also practised on the tea clippers and enormous sums were placed on certain ships. Generous premiums for the first cargo of tea of a new season brought ashore were paid for by the tea merchants and sold at especially high prices. Thus real tea races took place every year between the fastest ships. The last and most well known tea race took place in 1866. Referred to in the history of shipping as the "Great Tea Race ".

In May of this year 16 clippers were at anchor in Fu-Tschou. Five of these ships were classed as favourites for the imminent race, namely the four times winner "Fiery Cross" , the "Taeping" , the "Serica", the "Taitsing" and the "Ariel" . With great haste the first crates of tea were stowed away and on the 28th. May the "Ariel" put to sea first with 1,108,000 pounds of tea aboard. It was the bad luck of the ship that she had taken an unreliable pilot on board. She , therefore , lost her lead and was overtaken by the "Fiery Cross" . During the crossing of the Equator "Fiery Cross" , "Ariel" and "Taeping" were equally placed even though they were out of sight of each other.

On the 5th. September "Ariel" and "Taeping" reached the coast of Southern England almost at the same time. The "Fiery Cross" had already been beaten. At Dungerness the "Ariel" was the first ship to ask for a pilot. The captain of the "Taeping" was going to snatch away the pilot and only a daring run in front of the bow on the part of the "Ariel" prevented this.

GREAT RACE
OF THE
TEA SHIPS,
WITH THE FIRST
NEW SEASON'S TEAS.

PRICE OF TEAS REDUCED.

THE "Taeping," "Ariel," "Fiery Cross," and "Serica" have arrived, with others in close pursuit, with something like FORTY-FIVE MILLION POUNDS OF NEW TEA on board—half a year's consumption for the United Kingdom. This enormous weight coming suddenly into the London Docks, Shippers are compelled to submit to MUCH LOWER PRICES, in order to make sales.

We are thus enabled to make a Reduction of FOURPENCE in the pound.

4/0 down to · · 3/8
3/8 " · · 3/4
3/4 " · · 3/0
And so on downwards.

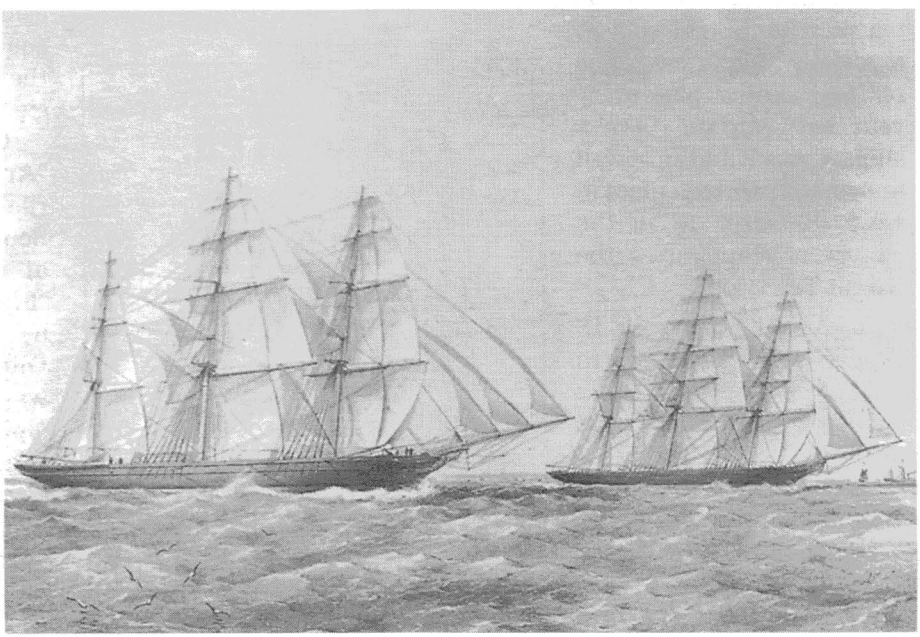
We may add the above Ships have brought a few lots of most unusual fine quality.

Reduction takes place on Friday the 21st inst.

BURGON & CO.,
TEA MERCHANTS.

An advertisment of a tea importer from 1866 announcing the arrival of the clippers. The ships are named according to the order of their arrival.

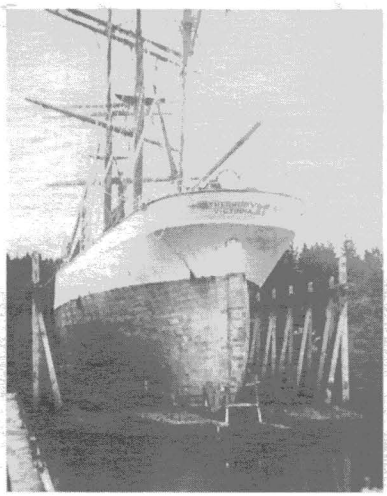
But she was unlucky once again, this time with the tugboat which was to tow her up the Thames. Helplessly the crew had to look on as the "Taeping" went past. She reached the London dock a few minutes before "Ariel". According to the rules, however, the race was only then finished when the last crate of tea was brought ashore. Tension was maintained. In the meantime the price of tea had dropped sharply in London. Therefore, the owners of both ships agreed to share the premium before it was possibly cancelled, and although the "Ariel" had unloaded her cargo first, the "Taeping" was declared the winner. During this year over ten million pounds of tea were brought ashore within a few days. This caused the prices to drop to such an extent that a regular tea race was never again staged. However, the competitions of well-known ships for the fastest voyage home were still held as before.



⚓ The China clippers "Ariel" and "Taeping" fighting for the first place during the last Great Tea Race in 1866.

The "Thermopylae" was designed by Bernard Waymouth and built in the year 1868 in Aberdeen by Walter Hood & Co. She was a composite ship with a length of 64 metres and 947 t. As an extreme clipper she reached a run of 348 nautical miles with a maximum speed of 26 knots. She was planned to be used as a China clipper for tea passages.

On her maiden voyage she broke all records in all sections. She achieved the voyage from Fu-Tschou to London (the famous tea run) in 91 days though the "Sir Lancelot" lowered this record two weeks later. On her voyages to Australia she normally managed in 69 days and on her tea voyages she reached an excellant average of 106.5 days. This made her a typical example of the beautiful and efficient clippers of composite design.



⚓ The "Thermopylae" as a bark in British Columbia in 1895. The photograph shows the fine lines of the stern.

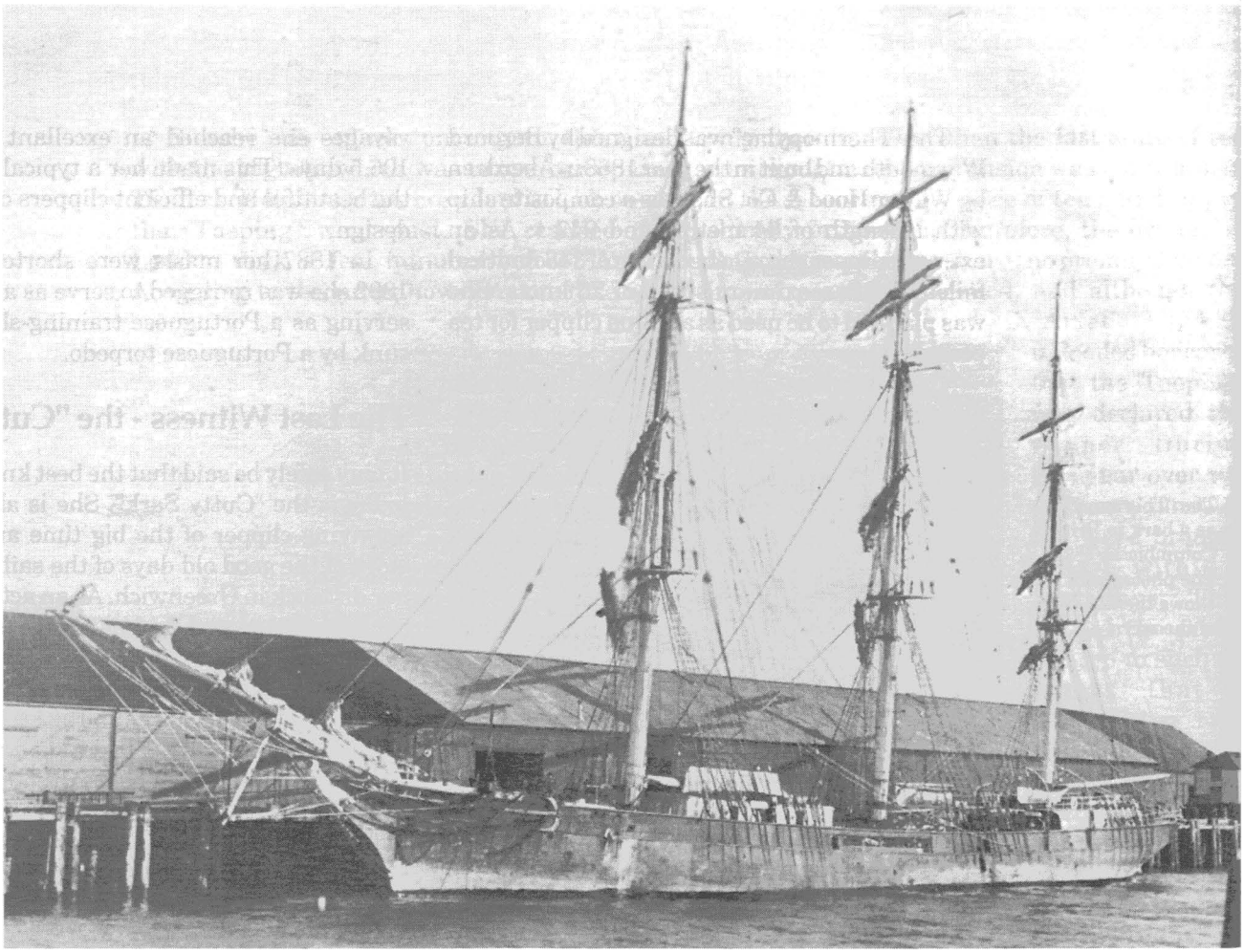
⚓ This photograph from 1890 shows the "Thermopylae" with somewhat neglected hull, heavily loaded in a Canadian port.

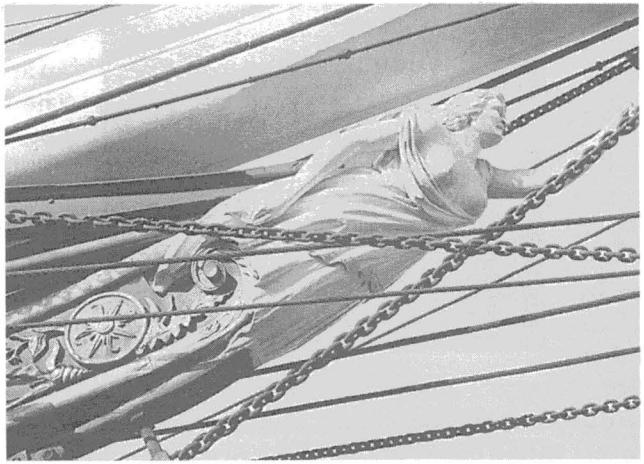
In 1887 her masts were shortened and in 1892 she was re-rigged to serve as a bark. After serving as a Portuguese training-ship she was sunk by a Portuguese torpedo.

The Last Witness - the "Cutty Sark"

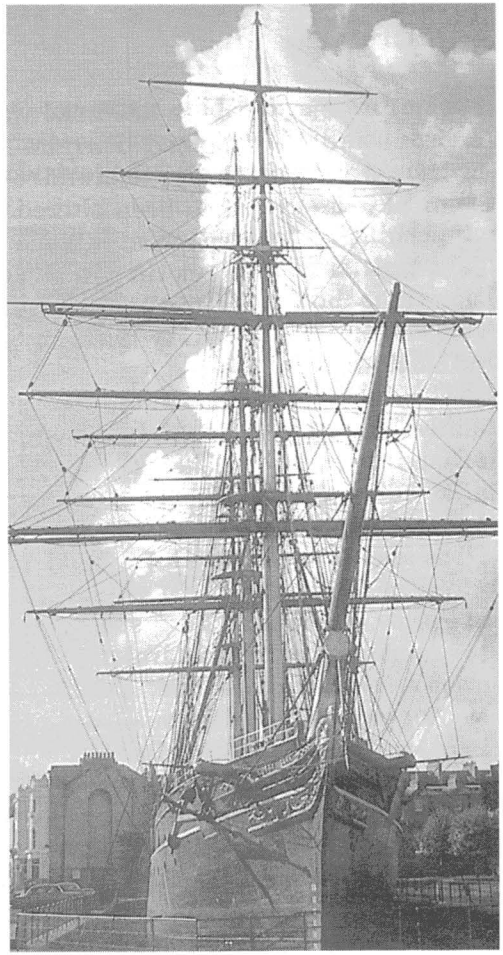
It may safely be said that the best known clipper today is the "Cutty Sark". She is also the only surviving clipper of the big time and tells the story of the good old days of the sailing ships in her dry dock in Greenwich. As an active ship she achieved the record, for her voyage from Sydney to London in only 79 days.

She was built in 1869 as an extreme clipper with a length of 64 metres and 921 t. Towards the end of the second clipper boom she was one of the last ships built for speed. Although she was never brilliant during the China voyages her trips to Australia were still remarkably fast. In order to reach full capacity, however, she still needed strong and constant winds.



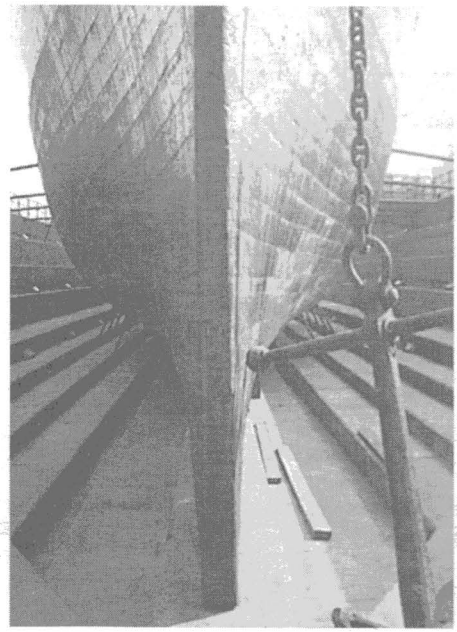


⚓ The gallion figure of the "Cutty Sark" . It was re-carved since the appearance of the original figure is not known.



⚓ The "Cutty Sark" in her dry dock in Greenwich. She is the last surviving China clipper.

In 1895 she was sold to Portugal and renamed "Ferreira" . Captain Dowman bought her in 1922 and re-furbished the rigging which had been altered. In 1954 she went into her own dry dock in Greenwich once again under her own name "Cutty Sark" and she has been preserved as a national monument for admiring future generations as the only surviving extreme clipper.



The Unlucky Giant

The steamer "Great Eastern" was to impress the world. Designed by the famous Sir Isambard Kingdom Brunel this ship was ahead of its time by over forty years. The building of this "Giant of the Seas" began in 1854. Her length came to a ledgendary 211 metres. She had two paddle wheels with a diameter of 17 metres and a 7.3 metre propellor at the stern. Five funnels and six masts with a sail expanse of 5,400 square metres. Based on ten watertight sections and a double bottom the ship was to be made unsinkable. Indeed she never sank despite all the misfortune she suffered the only thing the "Great Eastern" did not have was good luck.

Misfortune began when one day a riverter and an apprentice disappeared. The workers believed that both had been encased in the double bottom by accident where the riveting hammers drowned their cries for help. Their request to open up the bottom once again was rejected for cost reasons. From that time onward the ship was hounded by bad luck. The first launching took three months.

⚓ Gut erkennbar ist hier der scharfe Bug der CUTTY SARK, typisches Merkmal eines extremen China-Klippers.

All manner of things happened until in the end the giant floated on the Thames. The first company were declared bankrupt because of increased iron prices and the second was ruined by the cost of the fittings. The day before the ship sailed Brunel collapsed with a stroke during a photographic session. He died a week later at the age of 53. On the same day five people died when a funnel exploded during the transfer trip. Besides everything else the captain drowned when his boat capsized on the way to the landing stage. Since such an accident before or during the maiden voyage was a bad omen the reputation of a jinxed ship stuck to the "Great Eastern". The third company also pulled out.

A photograph of Sir Isambard Kingdom Brunel, the brilliant designer of the "Great Western", the "Great Britain" and the "Great Eastern". All three ships were far ahead of their time.

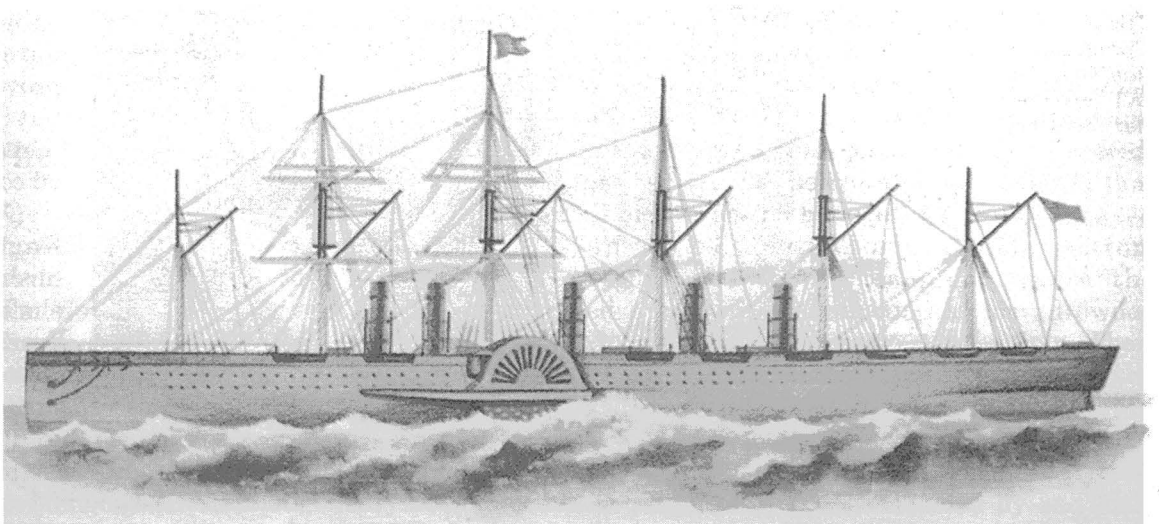
The famous shipowner Sir Samuel Cunard then took over the ship as the new owner.

At last on the 16th. June 1860 the "Great Eastern" started her maiden voyage with only 38 paying passengers and a crew of 418 men aboard, not a profitable undertaking. However, her arrival in New York was celebrated by thousands of enthusiastic people. An outing was arranged and enormous prices were charged but only 300 beds were available for the 2000 passengers. The outing was eventful with a burst pipe spoiling the provisions and due to a navigational error the "Great Eastern" went badly off course.

On the return voyage to England the series of mishaps continued. A drive shaft broke down, two people drowned when "The Great Eastern" became entangled with the hawser of a small ship and as a conclusion she also rammed the "Blendheim". She crossed the North Atlantic for four years and was involved in accidents again and again causing enormous repair costs.

In 1864 Cunard gave up as well and auctioned the ship off at a ridiculous price which did not even cover cost of the last repair. She was converted to a cable-laying ship for the first undersea cable from Europe to America, but when special cable-laying vessels were built in 1874 she was sold again.

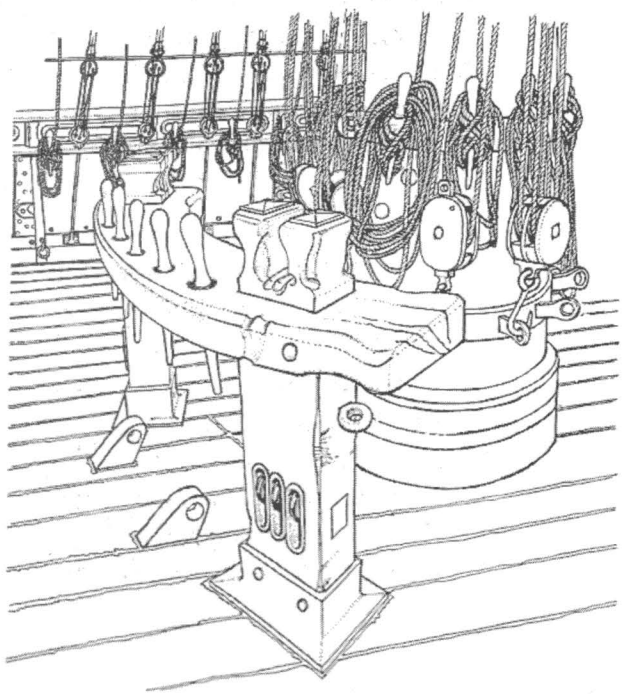
In 1888 she was finally scrapped with the aid of specially designed tooling. To the horror of the workers the skeletons of the riveter and his apprentice who had disappeared were, indeed, found in the double bottom. Everybody was now convinced that the dead were the reason for the lasting bad luck of the "Great Eastern". It was not until 1899 that a larger ship was built again.



⚓ The "Great Eastern" was the largest ship for forty years to be built. It was only in 1899 that a larger ship was built.

Basic Principles of Shipbuilding

The layman often looks upon sailing ships as untidy vessels which are burdened with useless ropes and undefinable rigging. In reality extremely strict order prevails. Even the smallest part has its place and each manual function has to be carried out in a certain manner. Only in this way was it possible to carry out vital manoeuvres practically blind, in the night or in heavy seas. Even on ships with dubious crews, order was maintained since every sailor knew that his life could depend on such order. He had to be able to rely on everything being in the proper place in the same way that he relied on the man before him having fixed a rope properly when he balanced at giddy heights above stormy seas. It was no problem for the sailor to recognise and name the innumerable elements of a sailing ship right off the bat. Also the non-seafaring population of the 19th. century was quite able to tell the difference between a bark and a fully rigged ship. One could tell sailing ships apart in the same way as nearly everybody can make a distinction between leading car makes nowadays.



Eine Darstellung der Nagelbank der berühmten CUTTY SARK. In ähnlicher Form waren diese Nagelbänke auf praktisch jedem Segelschiff zu finden.

Life on Board

There is much to report on about life aboard a ship even though there are not many authentic contemporary reports available. Additionally the reports of that time are romantically coloured and exaggerate or understate the dangers and joys of life aboard. One has to bear in mind that shipping in the 19th. century and everything connected with it was very much in the centre of public interest. Departure schedules were always issued and the deeds of famous captains were constantly talked about.

Work on Mailships

Nowadays it is often presumed that the profession of a sailor required no qualifications, but in actual fact it was a very demanding and instructional profession in which one had to learn everything from scratch. Captains especially, who in most cases started their career as ordinary sailors, were extremely respected persons.

To work on mail ships men of special calibre were required. They had to carry out hard work even in bad weather, put up with bad food and little sleep and often suffer rough treatment from a strict captain.

To run a mail ship required two to three dozen such men. The crew was responsible to the captain, the first coxswain and the second coxswain. Additionally a carpenter, a cook, a boatswain, some cabin boys and one or two stewards belonged to the crew. A capable sailor had to be well versed in many a trade. He had to be able to handle sails, booms and ropes, forge hooks and rings and work as a carpenter or weaver during repair jobs. The sailors work, therefore, was in no way limited to setting and hauling down sails.

⚓ A group of other ranks with their typical tools of the trade. Shown is a carpenter, a boatman, a sail-maker and a blacksmith.

The crew was split into two watches taking turns. In charge was always one of the two coxswains. One sailor had to be at the helm at all times. In stormy seas it was often necessary for two sailors to hold the rudder. They had to brave the waves beating over board and sometimes they faced the danger of being washed over board. The crows nest too, at the bow was constantly manned. This was a pleasant job in fine weather but purehell in bad weather. Part of the crew was continually busy doing maintenance work. To knock rust off the anchor was frequently a punishing job. The most monotonous of all work, however, was the scrubbing of the deck. Every morning this work was carried out at the commencement of the morning watch at 04.00 hours. It was considered to be a matter of honour to execute all work without objections and grumbling. In order to ease frequent monotonous work the sailors sang appropriate songs. For each activity there was a rhythmic shanty which exactly suited the rhythm of the work and was often over one hundred years old. Especially popular and respected were the sailors who were able to incorporate in the words of the songs the characteristics of individual crew members.

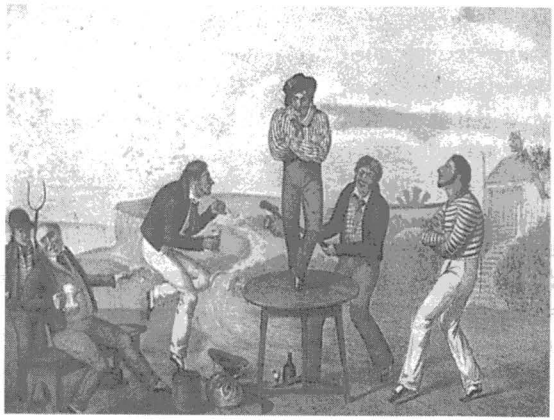
Normally the watch was relieved every four hours. In his leisure time there was hardly any diversity for the sailor. When there was a storm the rest period was often interrupted by the shout "All Men" . In spite of hardship and danger the sailors on mail ships earned very little. Since most of them spent their money on alcohol and women, only few sailors managed to provide for old age. Therefore, in most cases sailors ended up as dossers in some seaport town.

Few were offered the possibility of promotion from sailor to coxswain. Most officers on mail ships were ordinary sailors before. The second coxswain could possibly be promoted to first coxswain. Usually such promotion was effected at the age of thirty years. The first coxswain was responsible for navigation and cargo. Beyond that he had to have a wide all round knowledge in order to take the place of the captain in an emergency. Approximately every third coxswain could hope to be given the position of captain, but whoever was not a captain by the age of 35 years, remained third coxswain and normally turned out to be a very strict superior.

Old Salts on Land

After months of hard work and having been cooped up on a ship, the sailors craved for any kind of fun. One voyage's pay was nearly always spent in one day on alcohol and prostitutes. The seaport towns offered many opportunities to spend money. Around the harbour the place was alive with inns, cheap and nasty theatres and brothels.

Numerous public houses invited you to indulge in enormous drinking bouts. The different entertainment places outbid each other in attempting to promote business with the sailors. It is mentioned in reports about a famous Liverpool establishment that their patrons could inhale from containers filled with laughing gas in order to get into a most euphoric and generous mood after a few puffs.



⚓ A contemporary lithography published for the first time in 1825 in London showing sailors dancing the hornpipes dance after warming up on the grog.

Among the entertainment establishments there were the pawnbrokers shops easily recognisable by three golden-coloured balls by the door. Often the last pair of trousers were pawned here in order to obtain money for last drink. Tattooing salons also offered their services. The sailors liked to have their upper bodies and arms decorated with all imaginable pictures. Especially popular was a big cross which was to take care of a Christian burial in the event that the corpse was washed up on some heathen coast.

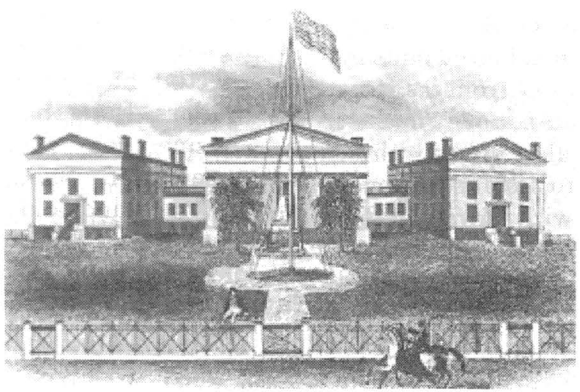
As soon as money ran short the pleasures came to a sudden end. Often the insolvent sailors were handed over by the pub landlords to agents. When Once sober the sailor found himself on a strange ship putting to sea. The landlord and the agent received a payment for this which was later deducted from the sailors wages.

Last Anchorage

Most sailors failed to manage to provide for their old age. The purse strings were far too loose during stays on land with alcohol, women and pleasures too tempting. The sailors finished up as dossers in seaport towns and often died on the street. With effect from 1833 a protective haven was offered to sailors by the Sailors' Snug harbour which provided a chance for pleasant and secure retirement. This Sailors home was founded on Staten Island and it was financed with the estate left by the ship owner John Randall. Its objective was to take care of old and needy sailors.

"They took me in because I am a cripple. They washed and shaved me and gave me a room which was as clean as the captains cabin on a warship and they said:' Here you will be well and safely looked after for good! '" Thus wrote a sailor in his memoirs who found refuge in Snug Harbour.

The destitute sailors were accommodated in comfortable rooms and provided with good food. A doctor and a nurse looked after their physical wellbeing. With different kinds of work the sailors were able to earn some welcome pocket money. Alcohol was absolutely taboo for the residents inside and outside the home. Violation of this rule was punished with the withdrawal of the chance to work, house arrest or smoking ban. There was a similar punishment for non-attendance of church services. Most people accepted their obligations willingly since it secured for them a protected and pleasant retirement.



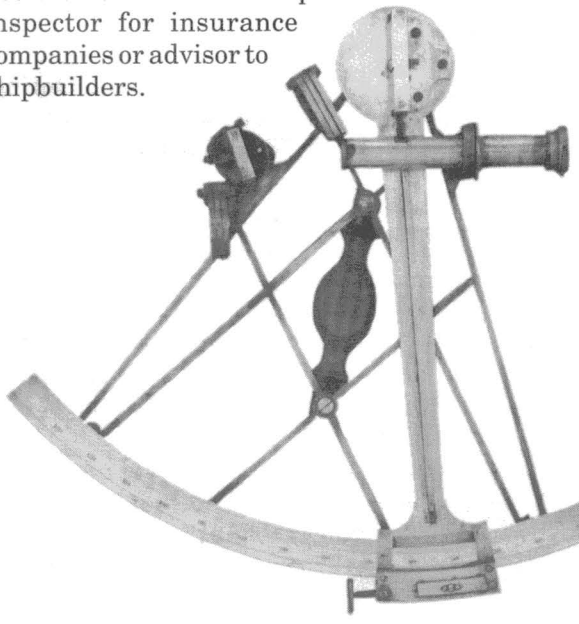
The Life of the Captains

As no other, the profession of a captain was surrounded by romantic charm during the 19th. century. The representatives of this profession enjoyed a high social prestige and associated with well-situated circles. It was quite customary to invite captains to social gatherings of the so-called high society. For especially fast crossings or other achievements, the captains as well as their ships received praise in the newspapers. Many people sought out their company and some passenger planned their voyage in such a way that they could be at sea with their favourite captain.

The captains of mail ships led a pleasant and luxurious life on land. Many of them were the owners of magnificent mansions and they stayed at elegant hotels.

Even their attire displayed a certain elegance. The mail ship captains earned especially good money as they shared in the considerable profit. For example they received prime money amounting to 5 % approx. of the freight charges as well as 25 % of the fares of the passengers. Some captains even received the whole charge of mail consignments. It was customary on many ships to place at the captains disposal a small part of the cargo space to enable him to conduct his own business. Therefore, their earnings were often thirty times as much as those of a sailor.

But such money has to be well-earned in the first place. Although the captain could delegate such tasks to his coxswains, the responsibility was always his. In order to adhere to sailing times or to break the records of other ships and captains, each bit of sail had to be raised. In doing so the ship was not to be seriously damaged. Frequently daring decisions were called for which verged on the narrow edge between irresponsibility and the pleasure in taking risks. The necessity to get the ship ahead all of the time was such an ordeal for mail ships' captains that hardly any captain stood the pace of transatlantic routes longer than five years. Upon the first signs of a drop in performance a captain would be dismissed by the shipowner. Therefore, many captains left voluntarily before it came to this. If savings sufficed, a captain could go into retirement. Many captains took on new activities such as ships inspector for insurance companies or advisor to shipbuilders.



⚓ Sextant

Captain H. Marshall was the proverbial exception to the five year rule. The gruff and cantankerous captain spent altogether 27 years at sea and he was a mail ship captain for 12 years. He was born in the son of an old whaler family Nantucket. At the age of 24 year he was already appointed as captain of the 350 t ship "Julius Caesar ". During his course of duty he distinguished himself as a great go-getter. In 1822 he commenced duty as a mail captain with the Black Ball Line. In 1834 he acquired the major portion of shares within the company, settled in New York and managed the business from there. He wa: a famous example of how far captain could advance.

⚓ Captain Charles H. Marshall, the main owner of the Black Ball line, set an example as to how far a captain could advance.

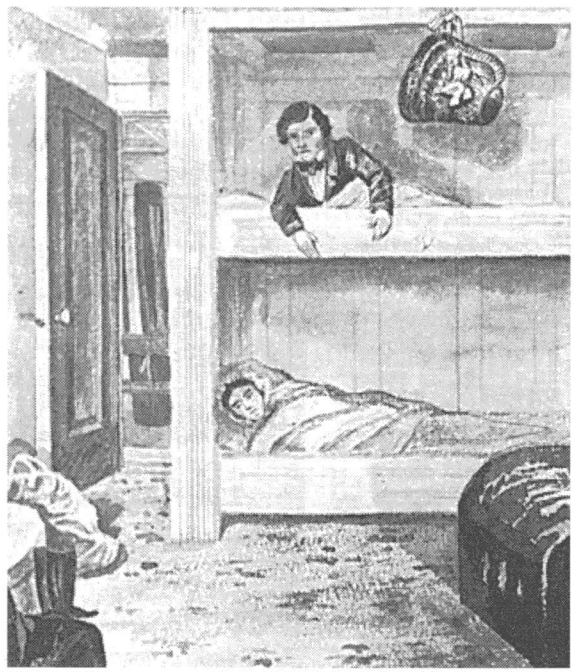
Another famous captain was Samuel Samuels. So many passengers wanted to sail with this infamous man that tickets for his ship had to be booked a season in advance. With his 1,400 ton luxury mail ship "Dreadnought" he sailed the transatlantic route. Samuels made the shipping agents a unique offer. He was so convinced of being able to adhere to the running times that he :d to pay back the freight rges in case the cargo was not elivered on time. Supposedly he never faced the embarrassing situation of having to fulfill his offer. Sailors often rumoured that Captain Samuels probably knew a secret route between New York and Liverpool.

Another famous captain was Nathaniel Brown Palmer affectionately known as Captain Nat. The man from Connecticut :nt to sea for the first time :n he was 14 years old and he became captain of the mail ship "Garrick" at the age of 38. Furthermore, he was a partner of the Dramatic Line which owned this ship. When in the harbour of New York he liked to display his nautical skills.

Whilst all the other ships arranged for the putting into and leaving
the port to be made easier by using tug boats, he insisted on sticking to the old method of sailing into and out of the harbour under his own power with great public interest. In 1840 he managed the crossing from Liverpool to New York in only 15 days with the "Siddon". This record was never broken by another mail ship.

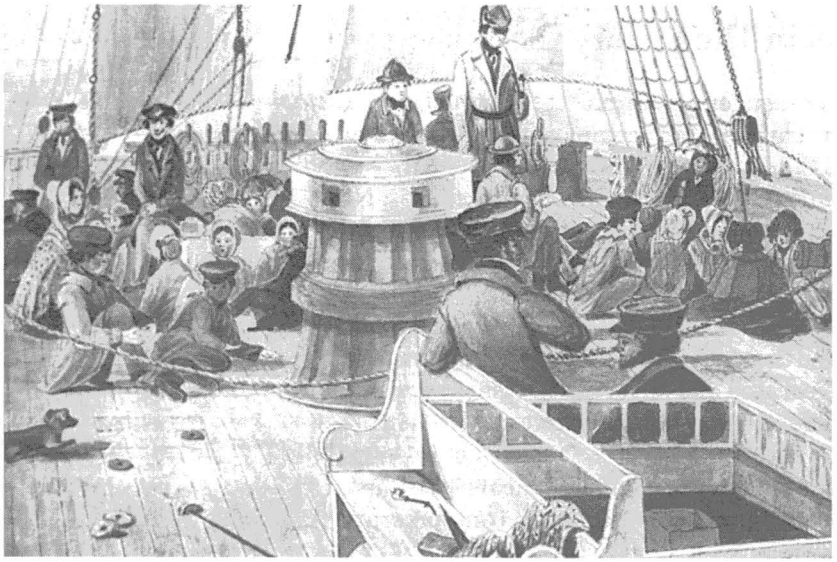
Travel in The Luxury Class

Cabin passengers could expect the sort of luxury on their travels which compared with the better hotels. So reports an enthusiastic journalist in 1843 after inspecting a mail ship's facilities. No salon or boudoir on land displays better white and gold colours, as in the time of Ludwig XIV or XV, the dining room of the "Marco Polo" as follows:- "The ceiling is panelled with maple wood and the square support columns are encased with decorated and silver-plated glass on which coins from different countries represent a novelty."
Both the furnishings and the meals were lush and extravagant. According to a contemporary report the breakfast served at nine o'clock consisted of " Black tea, coffee, biscuits, fish, chicken, lamb and eggs". Lunch consisted of a large selection of cold meats. The main meal was served at four o'clock in the afternoon and often lasted hours.



⚓ Interior view of a passenger cabin on a mail ship Luxuriously equipped with upholstered furniture and carpets.

On the menu were "Soups, fresh lamb, beef, pork and sometimes veal, chicken, bacon, plum pudding, preserves and cakes." For desert different nuts and fruits were served and drinks such included Madeira, Port and Bordeaux. Frequently real champagne was put onto the table. On some ships dinner was served again at seven o'clock. In the period between meals, which must have been short for some passengers, there were different ways to pass the time. A popular pastime was chasing rats and also shooting at bottles with rifles or pistols. Sometimesdaring passengers, would jump overboard and swim around the ship. On some ships there were even orchestras. Then of course there were popular games such as draughts, dominoes, chess, backgammon, whist and poker. At that time the custom of placing bets on the number of kilometres sailed per day was also introduced. If famous actors were on board, for instance Tyrone Power who crossed the Atlantic often, private performances contributed to the entertainment of the passengers. The fun and the pleasure was spoiled only during dead calm or storm.



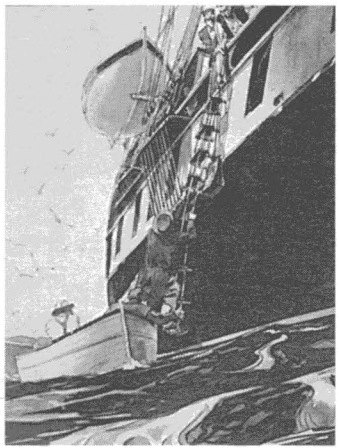
⚓ In fine weather the passenger liked to stay on deck. Time was passed playing the shuffle board games which are still popular on ships of today.

In such situations the sea voyage could be torture for even cabin passengers.

Pilot on Board

On the open sea countless dangers lurked for the ship. But these dangers were not over when approaching a port. Entering port represented an obstacle run between shifting sandbanks and changing currents with the constant risk of running aground. Especially demanding for the captains was the port of New York, a distance of 25 miles from the fireship Sandy Hook to the piers on the East river. Therefore, most captains made use of a harbour pilot to ensure safe entry. These pilots knew everything about shallows and currents. They managed to cope well with the often temperamental winds and they could tell a sandbank which had shifted after a storm by slight changes in the colour of the water. Correspondingly their judgment was highly appreciated. With the subtle intuition they knew how to guide the ships entrusted to them safely into the harbour. With effect from 1837 the New York Harbour Authority made it compulsory for ships to take a pilot aboard prior to entering New York harbour and imposed a fine on every captain who entered without one.

As soon as the fireship "Sandy Hook" was sighted the captain called for a pilot by using flare signals. With up to eighteen pilot boats continuously cruising off the coast, three to four boats would immediately set course for the ship wishing to be put into port. Races often took place as the pilot who reached the ship first was always awarded with the assignment. Depending on the size of the ship, the pilot demanded 20 to 25 dollars for his work. Many pilots brought along the latest newspapers, fresh laundry for the captain and also freshly caught fish. The pilots did not take command of the ship, but the captain based his instructions on the advice of the pilot. Slowly but surely they then



⚓ A pilot comes aboard via the Jacobs Ladder. In his bag he carried fresh laundry for himself and the captain as well as the latest newspapers.

proceeded in the direction of the port. The pilots did not attach any importance to speed as their reputation depended only on how safely they guided their ships into port. A voyage from Sandy Hook to the harbour normally lasted 24 hours but it could take days or even weeks in storms.

Catastrophes at Sea

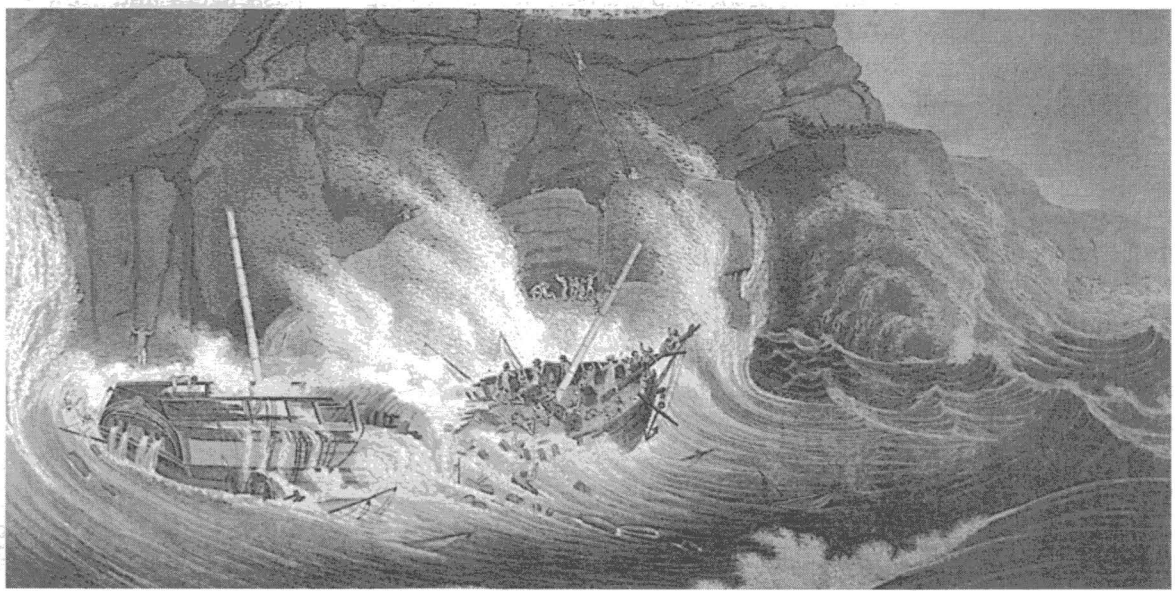
Mail ships were very much endangered at sea. This was not because they were built badly, but because the captains often had to take risks in order to adhere to the running times. For a mail ship, bad weather was not a reason to heave to, or to delay the start the voyage.

On the 1st. April 1822 the 434 ton mail ship the "Albion" left the port of New York. She was a robustly built and well-proved ship serving the Black Ball line, sailing under the command of Captain John Williams. He was 37 years old and at the height of his career. He was the unofficial commodore on the Black Ball fleet. Within the excellent time of 21 days the ship reached the Irish coast in pleasant weather. But then the visibility deteriorated and white squalls appeared. Towards the evening the storm changed to hurricane conditions and the ship was seized by a huge wave and slung to the side. Many passengers were injured, and the main mast, the top of the mizzen mast and the front of the Marsstenge broke off. The lifeboats, the deckhouse, quarterdeck equipment, compasses and all axes were washed overboard. Six crew members and passengers were swept into the sea. Without the rudder the ship was no longer controllable and was carried by the waves. At about one o'clock in the morning the end was in sight. The captain declared the ship lost. The first coxswain said later: "At that moment our situation was undescribable. I dare not think of the horror nor do I want to tell the details."

At three o'clock in the morning the "Albion" crashed against some rocks on the shore. The ship broke apart, the captain was swept overboard and came to an end in gale-lashed sea.

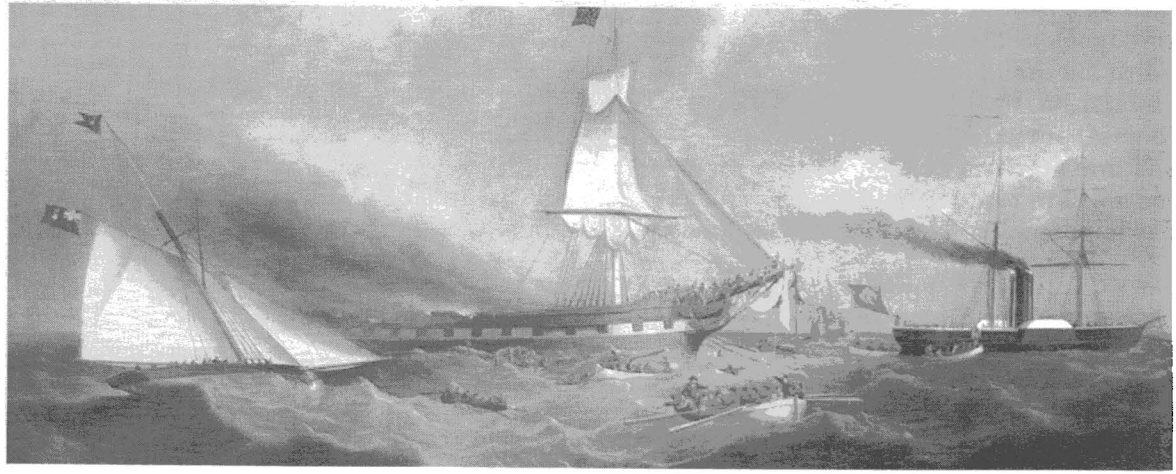
Only a few people managed to escape to the cliffs where they held on for dear life. It was only after several hours that the storm abated and some helpers managed to free the survivors from their precarious situation with the aid of ropes.

The seas proved their power in other ways, too. Some ships for instance disappeared without trace on high seas. In November 1844 the 650 t "United States" and a week later the 729 t "England" left Liverpool harbour. Although both ships were considered reliable they never arrived in New York, their destination. On the 7th. March 1845 they were finally listed as missing.



⚓ When the "Albion " broke up in 1822 on the rocks of the Irish coast, 45 people lost their lives.

On the 24th. August 1848 the 1,301 t "Ocean Monarch" put to sea from Liverpool. There were large quantities of cargo and nearly 400 passengers on board. Still in the channel the ship met with the 1,404 t "New World" . A race between both ships was imminent. But round about lunchtime a fire broke out in the rear section of the ship. Within a short time the entire aft the rear of the ship was burning. All attempts to extinguish the fire achieved nothing. Two boats could be lowered into the water and the first coxswain, some crew members and some passengers were able to save themselves. The other boats burned before they could be lowered. But it was a blessing in disguise that the "Ocean Monarch" was still close to shorewhere many ships were about. The life boats of these ships fished the survivors out of the water. The ship was completely destroyed by fire. Nearly half the passengers and crew lost their lives, but the remainder were rescued.



In most cases the insufficient number of life boats was responsible for the tragic outcome of many a disaster at sea. If one had secured a much sought after place in the boat, this did not mean ultimate safety. The boats were often overloaded and liable to sink. Often macabre fights developed in a boat promising salvation. Especially horrible is the story of a life boat on the "William Brown" which collided with an iceberg in June 1841. The life boat, over which coxswain Alexander Holmes had taken command was hopelessly overloaded. Holmes ordered the crew to throw sixteen passengers overboard. The first to go overboard was a man called Frank Carr. Despite his fervent pleas to have mercy on him, he was thrown into the sea. Horrified, his youngest sister Mary called: " If you throw him out, throw me out as well. I want to die in the same way as my brother. Please do not separate me from my brother." Promptly she was taken at her words and also thrown overboard without hesitation, together with another sister. A little later the life boat was sighted by a ship and the passengers were taken aboard. The witness accounts of the surviving and horrified passengers later led to the conviction of Holmes for manslaughter.

⚓ The sailor Frederick Jerome saved the lives of dozens of people on the burning "Ocean Monarch" whilst risking his own life.

The Lifeboat Pioneer

Life boats were not built to withstand rough handling. Many were wrecked during hectic lowering onto the water. Furthermore, they were not seaworthy on stormy waters. They keeled over easily and high waves the boats to sink quickly.

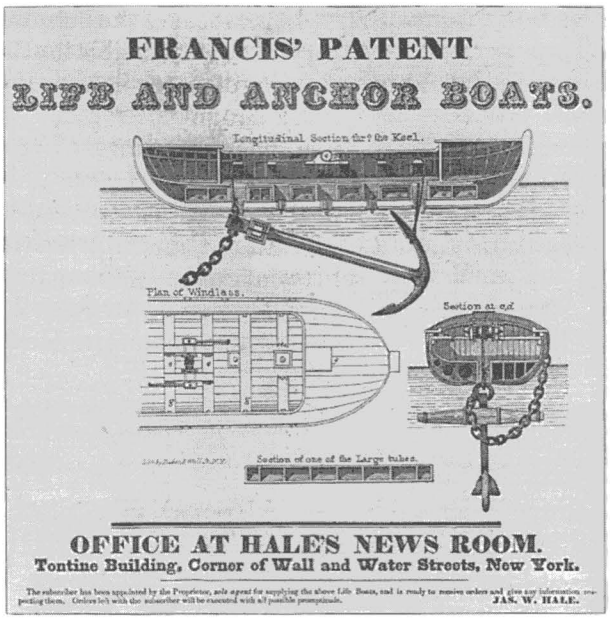
Joseph Francis from Boston dedicated his life to the improvement of life boats. At the age of eighteen he won a prize for designing an unsinkable rowing boat, the bow and the stern of which were filled with cork.

⚓ A leaflet from the year 1839 advertising the unsinkable life boat invented by Francis. The life boat could carry 300 persons or a heavy anchor with a weight of 2000 pound.

He went to New York to find buyers for his invention and to continue his

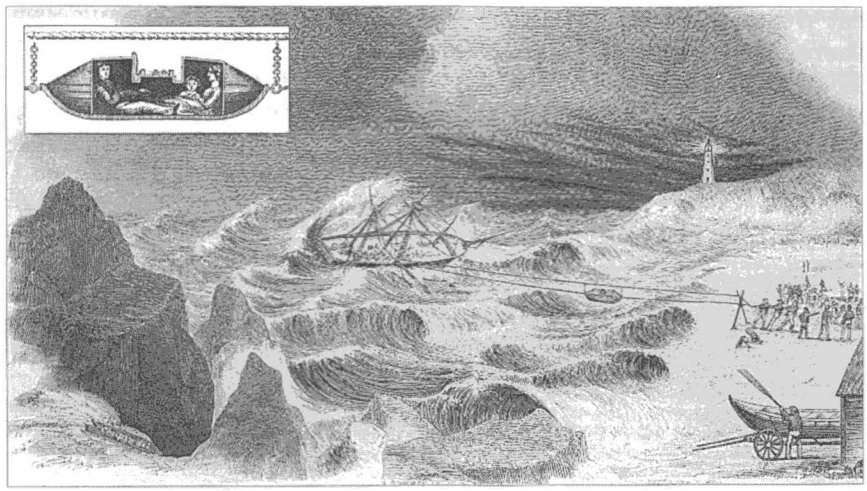
work on better life boats. Up to 1837 his success was very modest but in that year he introduced his newest invention to the public and the press in a spectacular way. His new boat had cork chambers at the bow and the stern and also additional air chambers made from copper at the sides and underneath the benches. On the sides lifelines made it possible for up to 40 persons to hang onto the boat. The boat was turned around and the water drained away quickly through the perforated bottom. Attempts to sink the boat failed. Following this demonstration and other similar and successful ones, Francis was able to look forward to a secure future. Already in 1840 it was compulsory for all American warships to have Francis' life boats aboard. During the following years he perfected his life boat by substituting metal for wood.

His next invention was a recovery vehicle. It was to facilitate the saving of passengers from ships aground close to a coast. To date it was often not possible to reach these ships from the shore since the rescue boats would



have been destroyed in the stormy surf.

The new rescue vessel was an enclosed metal boat with space for up to five persons. By means of a hawser harpooned from the shore to the ship the vessel was securely pulled along above the raging sea.



⚓ The rescue vehicle by Francis (small picture) offered room for up to five persons. It can be seen here during the sensational mission of saving the shipwrecked passengers of the stranded mail ship "Ayrshire" in 1850.

The Pioneer of Steam Shipping

In the first years of mail boat shipping it was taken into consideration as to whether steamships could fulfil their task in a better and more rational way. They were of course largely independent from the wind and it was widely believed that their machines would not withstand the stresses of such a voyage.

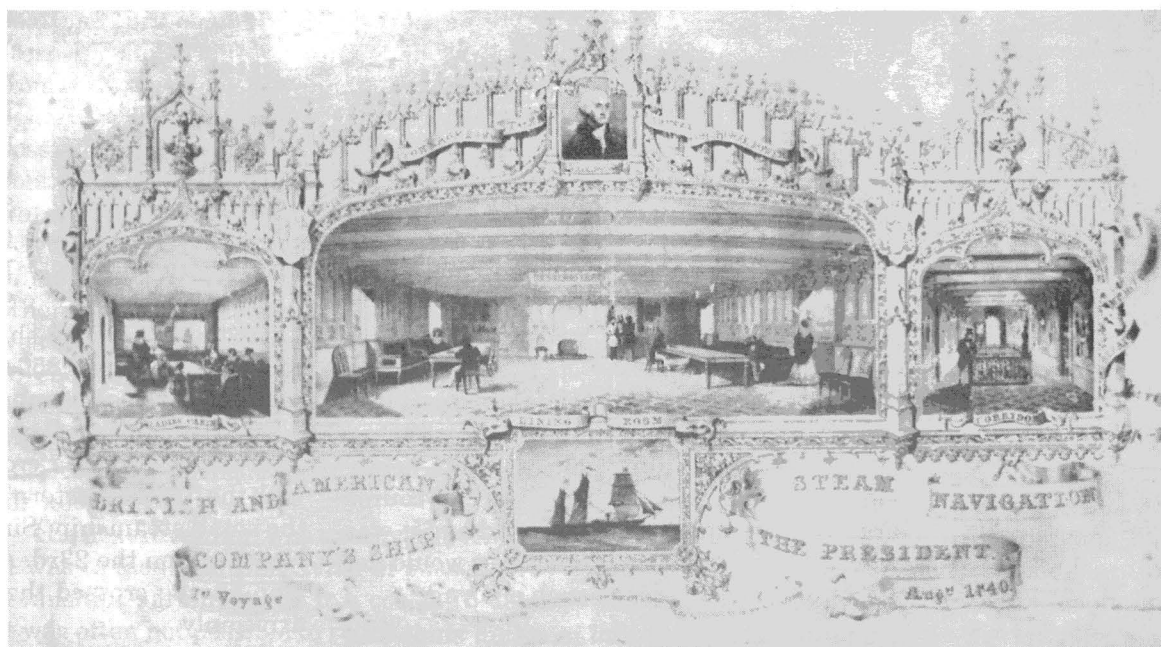
Junius Smith believed in steam ships and wanted to open a steam ship line across the Atlantic. He travelled across to New York in order to find financial backers for his undertaking. Greatly disappointed, by the unwillingness of New York financiers to take risks, he returned to London. In the end he found financial backers for his project. Subsequently he founded, in 1835, the British and American Steam Navigation Company. The first ship was completed in 1838. She was the 1,850 t "British Queen". But competition was not napping either. The Great Western Steamship Company founded one year later also planned a crossing of the Atlantic with the "Great Western". Smith had to charter the small steamship "Sirius" which arrived in New York on the 23rd. April 1838 as the first ship having crossed the Atlantic with steam drive only.

She arrived barely eight hours before the

"Great Western".

Thereafter the "British Queen" sailed on the London-New York route. For her voyage to the West she took 16 days on average and in the other direction two days less.

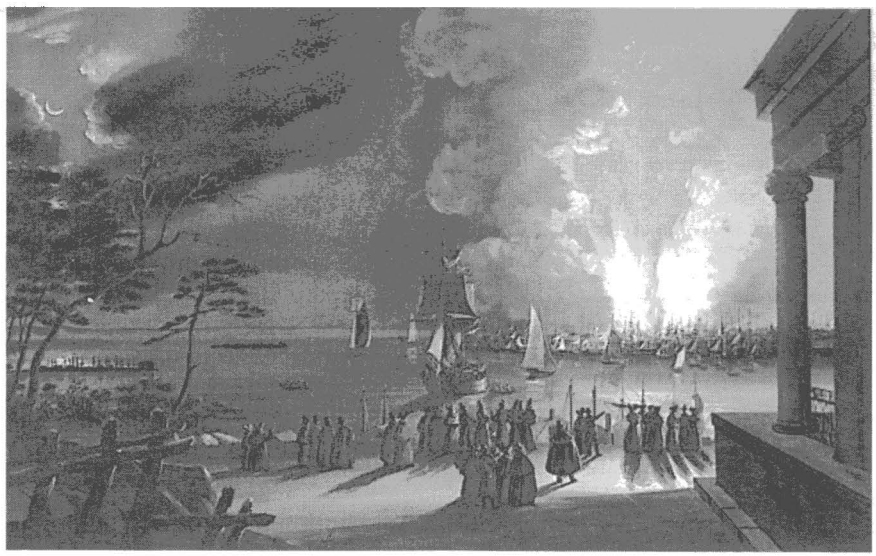
Many sailing ships took twice as long for this run. The greatest coup of Junius Smith was the commissioning of the "President" in 1840. With 2,866 t she was the biggest and proudest ship. Subsequently Junius Smith, the daring



⚓ A lithography of the occasion of the maiden voyage of the small steamship "President". Shown is the ladies' cabin, the dining room, a passage and a side view of the ship.

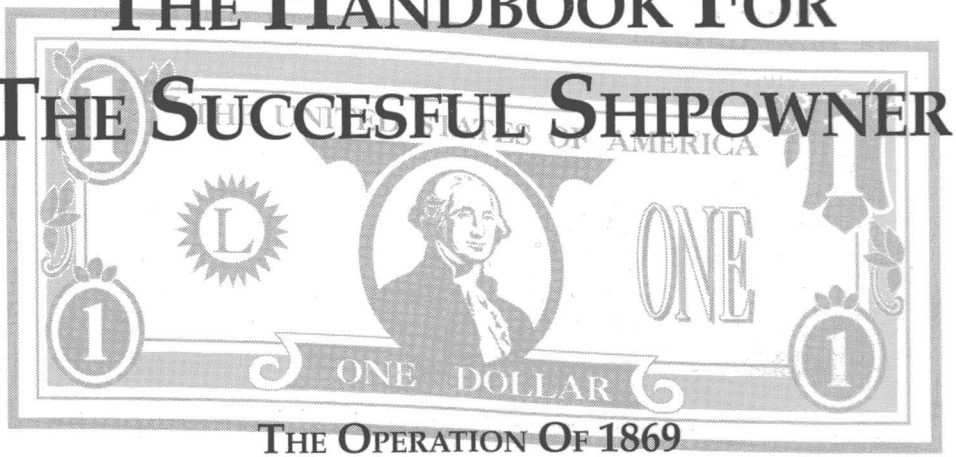
innovator, was showered with honours. Rumour had it that he was even to be knighted. But in 1871 the "President" sunk. All 136 crew members and passengers died. Among the passengers were such famous persons as the Irish actor Tyrone Power. This disaster in shipping occurred and not on the seas. On the 16th. December 1835 a fire broke out in the business quarter of Manhattan. Starting in a warehouse a devastating fire developed. Due too strong winds the fire spread rapidly. Additionally the hydrants were frozen so that the fire brigade had to look on almost helplessly. Most captains succeeded in taking their ships to the open sea before the flames reached the pier. Only few ships caught fire.

On land the owners of warehouses had to look on as their properties were consumed by fire. There was unimaginable chaos. Within 24 hours 674 buildings were destroyed. It was only on the next day that the fire would be brought under control.



1869

The Handbook For The Succesful Shipowner



The Operation Of 1869
Ten Golden Rules
Tips And Hints

Operations From 1869

Success of course does not come about by itself. A ship owner of the last century had to be well informed in many areas. Not only the knowledge about the secrets of trading ensure success but also an excellent knowledge in the field of shipbuilding, types of ships, running a ship , nautical science, readiness to take risks, and last but not least being informed about the political and economical situation of the world were absolutely essential for the running of a shipping firm.

As1869 includes true historic events, it is important to spend one or two hours of your leisure time reading this handbook. In so doing you will be able to appreciate the finer points of 1869 and give you a competitive edge over rival 'shipowners'. For example at the time of the American Civil War your competitors may be trying unsuccessfully to buy cotton in Savannah, you may have long seen the signs of the times and ordered your merchant fleet to go to more profitable and safe ports.

In 1869, as in life generally, "Knowledge is Power"!

Installing 1869

PC Version.

The PC version cannot be played from floppy disk. 2.4 MB are required to be free on the hard disk.

For installing purposes please insert the disk in a disk drive. Now start the installation program INSTALL. BAT. from that drive.

During the installation you are given the possibility of entering another index path. As a standard 1869 is installed on hard disk C in directory C:M-Design.

Example:-

Disk A is in disk drive A and 1869 is to be installed on hard disk C.

- Enter A:/INSTALL<Enter.>
- Upon the question for the desired installation path press <Enter.>
- Insert disk B on request.

Start the game with the following entry:-

C:\M-Design\1869 <Enter.>

AMIGA Version
If you wish to play 1869 from the disk, insert disk A in the disk drive. Now switch on your computer or call from the work bench the 1869-Icon by double click.
You may also install 1869 on the hard disk. For this purpose call INSTALL-ICON from your work bench. For the start of the game call 1869-Icon from the work bench.

Start of the Game

Upon the start of the game you have the following possibilities regarding selection and entry:

Control
You can select whether you wish to play with the mouse or via the keyboard. (Mouse operation is recommended).

New or Old Game
If you begin a new game, press the space bar. In order to load an old game, press J. You can then select the game from previously stored games.

Number of Players
Enter the number of players. Up to four players may take part.

Name of player
Here you can enter your name. You will also be addressed by this name by the layers coming up in the game. It goes without saying that such pseudonyms as Captn. Hook are also permissible.

Sex
In order to ensure that you are correctly addressed by merchants, dockyard owners and bank directors you should state your sex here.

Name of Firm
Now you should give your rapidly flourishing and growing firm an attractive name.

Location of Firm
Select where the principal town of your firm is to be. In this town you will have your company office and also your first store. Each of the five towns for selection have their advantages and disadvantages which will become evident as you progress.

When all players have completed their details you will be asked whether all details are to your satisfaction. If this is so, then there is nothing in the way to begin a thrilling and entertaining game.

The Ship Auction

For more than one player 1869 begins with a ship auction. Many favourable bargains can be had here, but care is needed as many a player has ruined himself at the start by aggressive over-bidding.

A ship is called up by the auctioneer at a minimum price. Each player can now participate in bidding by clicking his player's name. Thereby the offer increases by fixed values. The name of the player offering the most at this time is displayed. If there is no more bidding for a certain time, then the highest bidder receives the addition.

The auction can be speeded up with the ESC key. The highest bidder will receive the addition immediately and the auctioneer continues with the next ship. If there are no bids for a ship then there is no sale.

An auction also takes place when a player has ordered a ship but is unable to make payment. The completely built ship which has not been paid for is released by the shipyard for auction. Some time before the date of the auction each player receives notification enabling him to be at the location of the auction in time.

⚓ A ship is auctioned off. This is a welcome opportunity to get new ships on a small budget.

You may only participate in an auction if you are present at the location of the auction either on a ship or in a branch office ensuring of course that on this ship or in this branch office sufficient funds are available. Auctions prove again and again to offer a popular opportunity to acquire cheap and good ships.

Fast Entry for the Impatient

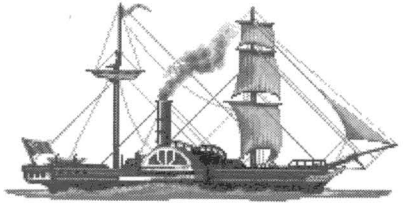
Successful shipowners distinguish themselves by showing patience, control, and readiness to take risks and the instinct to know the right moment for action. However, for the very impatient player we have a few tips for a quick entry to the game.

First go to the shipyard and buy a second hand ship. When the ship is yours, go to the tavern, not to drink of course, but to hire a crew for the ship. The landlord of the tavern is pleased to give assistance. The quality of the crew should match the quality of the ship. It takes a few days for the landlord to drum up the crew. In the meantime you may take money from the warehouse to the ship since merchandise always has to be paid for on the spot. Since it is not your intention to go on pleasure trips you are urgently advised to call at the office in order to purchase goods. Only with a relevant cargo in the ships hold does she become a trading vessel.

Do not go on excessively long voyages to start with. Call only at safe ports and trade merely with safe goods. Your ship should always be fully loaded since half-filled ships can ruin a company in a short period of time.

Game Aims

In the single-player mode it is the aim of your game to be included in the "List of the Best" after a certain number of years. In the multi-player mode there is the possibility of a 'knockout' victory if all competitors have been eliminated. Winning can also be defined as the player who has the strongest company after the end of playing time.



⚓ The small steamship "Sirius" can accommodate up to thirty passengers. Bigger shipyards like to build this ship to order.

The main chart is the central control element of the trading simulation in 1869. From here you manage your world-spanning company, direct ships and enlarge your trade empire.

By simply clicking on sections of the chart you get comfortably and quickly into the individual action screens. The chart consists of a large main field which depicts one of the four continents of the world and different control parts, the importance of which are explained in the following.

⚓ The main chart with the individual control elements. It represents the central control desk of 1869.

Name of Firm

This is the name of the active firm which is taking its turn during the present move of the game.

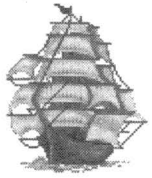
Calendar

The actual date may be taken from this calendar.

Clicking the calendar finishes one's current move. With only one player participation, the calendar flicks to the next event. When there are several players, the next players move in turn. When all players have completed their moves, the calendar goes on to the next event. Now it is the turn of the player whom the occurring event concerns. Subsequently all the other players may participate in the game.

There are the following events:- A ship has put into harbour, a ship has been completely rebuilt or repaired, a hired crew has come aboard or a crew is completely rested after a break in the harbour.

Ship's Control



If one clicks the ship with the left mouse key one enters the ship dispatch mode.

If one clicks the ship with the right mouse key the ship status screen appears with the information and sets possibilities with regard to the condition of the ship, cargo and crew.

Actual Capital in Cash

Here you see at a glance how much actual cash is at your disposal currently. This includes all cash in branch offices and on ships. Each player begins with a capital of $7,000.

World Map

By clicking the relevant continent the view in the main field changes to that desired continent.

There are four continents, namely North America/South America, Europe/North Africa, Africa/ South Asia and Asia/Australia. The views overlap a little to permit optimum operations.

Bank

By clicking the symbol you can enter the Bank and take out new loans or extend existing ones.

Records

Clicking this symbol leads to a memorial tablet on which the eternal records of crossings are retained. It is the dream of every captain and shipowner of course to see the name of his ship on this tablet.

Balance sheet

This is an extensive listing of the firms expenditure. It offers a means of drawing comparisons between individual firms.

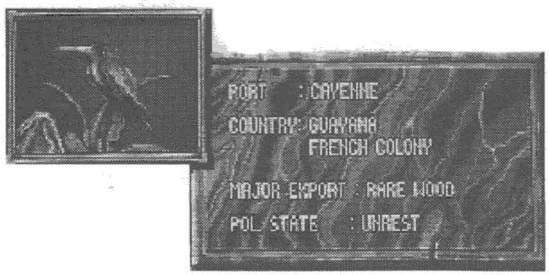
Options

Here you are given the possibility to load or store positions in the game, to switch on or off messages and to end the game.

Ship
This symbol indicates a ship lying in the port which is available.

Branch Office
If one has a branch office or head office in the port the relevant port symbol is indicated by a flag.

Port
If there is no ship of one's own, branch office or head office in the port clicking of this symbol causes a view of the port to appear as well as the information window showing the name of the current town, its main export goods and the political state of the country.



⚓ With the aid of the information panel useful information about export goods and political statescan be obtained.

By clicking on a port, with the mouse, where you have either a ship or a branch office, you get to the office.
If click such a port with the right mouse key, a symbol listing appears with up to four possibilities of selection.

Info
The information panel belonging to the port appears.

Beer Jug
Enables you to visit the tavern in the port where one can hire crews and also pick up some useful tips.

Anchor
This symbol leads to the shipyard. The symbol only appears in the case of ports with a shipyard.

Crate
Allows you to go to the store or the head office. The symbolappears only in the case of ports where you have a warehouse or head office.

Dialogue Operation

With 1869 you need not make any entries via the keyboard. All actions, dialogues and transactions can be made using the mouse.
During the course of the game you conduct discussions and negotiations with different persons. You may select from a number of sentences that which suits your taste and intentions. This means of communication applies throughout the entire game.
On some occasions the dialogue concerns amounts of money or quantities of goods. Such sentences always begin with three dots (for instance "...How much would 200 crates of textiles cost me"). Here you adjust the quantity or the amount by clicking. If you click such a sentence with the left mouse key, the set quantity or amount is increased. By clicking with the right mouse key the quantity or the amount is reduced. Therefore, the rule is always: Quantities or amounts are increased with the left mouse key and reduced with the right mouse key.

In order to confirm purchases, sales or other transactions you always select a sentence beginning with "OK,....". For instance if you wish to confirm a purchase you click the sentence "OK, load everything." The set quantity of goods will then be taken to the ship and the purchasing price will be debited.
If you have several sources of money in a port (for instance a ship and a warehouse,) you can enter the money source from which the money is to be debited with the following sentence: "I have $3000 at my disposal in the warehouse".

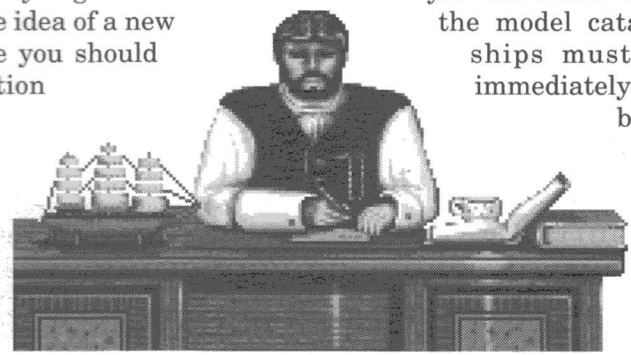
⚓ Dialogues and negotiations in the game are effected by using the mouse

Here again the following rule applies: up with the left mouse button and down with the right button.

Since this kind of operation remains constant throughout the game you quickly become competant in the games methodology.

The Shipyard

Your first steps in the game should take you to a shipyard except if you have already bought a ship at the auction. At the shipyard you can purchase a second-hand ship or order a new ship. Remember, second-hand ships are somewhat cheaper than new ones and your budget is not very high at the beginning. Even if the idea of a new ship seems attractive you should take into consideration that you have to purchase goods, hire a crew and that your competitors may already be making a profit during your waiting time by using a second-hand ship with a shorter delivery.



⚓ In the shipyard office you negotiate with this gentleman about the purchase and sale of ships and also about repair orders.

Ships can also be repaired in the shipyard. Depending on necessity barnacle growth can be removed from the hull (scraping), the hull can be painted and sealed, the rigging or steam engine overhauled and the ship generally serviced this being the most expensive option. Depending on the extent of repair work this will take a few days. During a repair the ship is not at your disposal and the relevant ship symbol disappears. Also only ships without cargo may be taken in for repair.

If you wish to buy a second-hand ship or choose to have a new ship built you can select the desired ship from the model catalogue. Second-hand ships must be fully paid for immediately in cash and they will be placed at your disposal after four days.

For a new ship a down payment of 25% of the purchase price is due immediately.

The remainding 75% of the purchase price can be paid to the shipyard at any time prior to completion of building. If the total purchase price is not paid by the completion date, weekly interest will be charged. In this instance caution should be exercised as the ship is released by the shipyard for auction if the interest exceeds the down payment made. However, up to the date of the auction the original purchaser is offered the possibility at any time to pay the outstanding amount.

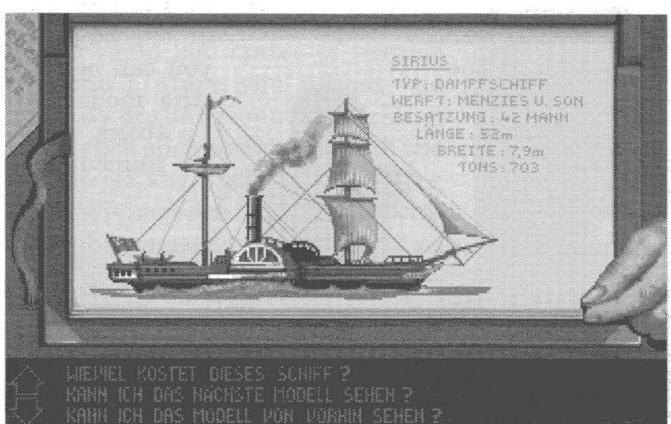
When buying new ships you can trade-in your old ships. If you finds that the sales price for an old ship is higher than the cost of the new ship, then the ship yard will pay the excess into the next available money source. If there is a warehouse in the town it is paid into that, otherwise it goes to a ship.

If one has selected a new ship, she can be formally named. A heraldic figure appears on the screen in which you can enter the name of the ship. The first letter of the name must not be a zero symbol. If you press the ENTER key without naming the ship the purchasing procedure is called off. If the name has been entered the down payment is required to be made at the office immediately. But it is also possible to withdraw from the purchase at the office.

A ship which is no longer required can be sold to the shipyard. However, this can only be done when there is a second ship in the port or a new ship ordered from the shipyard.

⚓ You may give your new ship a name by this heraldic figure.

⚓ Second-hand or new ships are selected from this model catalogue.

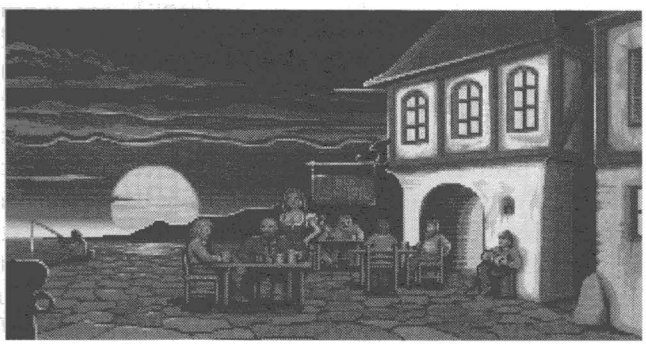


In adddition to large and famous shipyards there are also some smaller shipyards. Some of these only carry out repairs or offer smaller types of ship. You can also sell ships to these yards. These are kept on the books as second-hand vessels for a period, after which they are scrapped. As happens so often in life, repairs at the smaller shipyards are often cheaper than the big and well-known dockyards which are over-burdened with orders.

In The Tavern

As a respectable shipowner, one does not visit the tavern, to drink grog. With business in mind you can hire a ships crew from the landlord. This means that if you have the choice you also have the worry. The question is should you hire top people with correspondingly high wage requirements or a normal crew or even a low-paid crew who mix up port and starboard ? The scope is wide and this is where your instinct comes in. Generally the motto "The right crew for the right ship" applies. Even a top crew cannot perform miracles with a ship that is half-wrecked and a lot of landlubbers will not achieve record times even with the proudest clipper. But do make sure that you are able to afford the monthly wages as without pay even the most reliable crew will revert to mutiny.

By clicking the desired crew with the right mouse key the confirmation sentence "OK, I take the people" appears on the screen. By selecting this sentence you are hiring the crew. The landlord will then inform you in how many days the new crew will arrive on your ship.



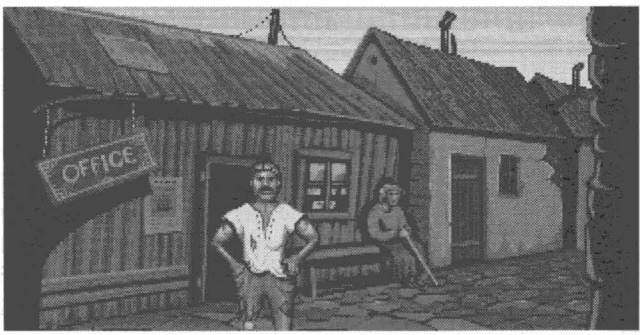
⚓ The landlord of the tavern is a very helpful man. He assists in hiring a crew, opening a branch office and he knows many a useful tip. The latter, however, is only given against a free beer.

⚓ The head office of a successful company should look a little different to this. Tumble down shack or smart palace, it's up to you.

The landlord also provides information regarding the cost of a branch office in this port. If you wish to open a new branch office you may do this here and now.

Additionally you can transfer money in the tavern from one ship to another. For this purpose you select first the source ship and then the receiving ship, enter the relevant amount and confirm as follows:- "OK, I will send the money to the.....".

Since many people from all over the world call into port taverns and as alcohol makes people very talkative a lot of useful information comes to the landlords ears. For a round of beers he might perhaps let out some secrets to you.



Branch Offices and Head Office

In the town which you select as your starting point at the beginning of the game the head office of your firm is located. The head office and possibly further branch offices are marked on the main chart by a flag.

At the head office or the branch offices goods can be stored and then loaded onto a ship. Money can be transferred from a ship to the warehouse and vice versa.

The appearance of head office depends on the value of a company. The bigger the firm the more sumptuous the head office, but unfortunately the same applies the other way around. The head office of a company can neither be moved nor closed.

You may establish branch offices in any port. However, a warehouse also swallows up running costs. The costs of establishing a branch office are dependant on the chosen location. At stragically important points establishing and maintaining a warehouse is very expensive in most cases. But a warehouse offers the advantage that one is always

informed of the kind and price of the offered and required goods in the relevant port.

Every warehouse with the exception of head office can be closed down as required.

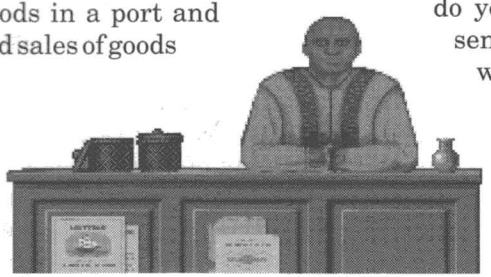
At the beginning of the game one should proceed with caution when considering the opening of new branches as the costs of them are high. Consider the location of a new warehouse very carefully and observe the cost/yield factor.

Selling and Purchasing in the Office

Since it is certain that you are not sending your mercantile fleet across the oceans of the world for the fun of it, you should visit the office frequently. This is the place of transshipment of goods in a port and here all purchases and sales of goods are dealt with.

You will see on the board which goods are required or offered by the dealer. The price either which he demands or offers will vary as not every dealer pays the same for goods and a comparison is always worthwhile. For urgently required merchandise a high additional premium is often offered. On the other hand it can happen that a dealer does not need a full ship's cargo of a certain kind of goods. This happens regularly in smaller ports.

When you offer a dealer goods he will first tell you the required quantity and the possible premium. This quantity is automatically entered with the sentence "How much do you pay for.....?". If you enter the sentence "OK, I will sell the goods" without changing the quantity, then you sell the dealer the quantity he requires and for which he may pay the premium. Of course one can also sell to him the rest as long as he offers a reasonable price.



⚓ On this board each dealer marks the goods in demand offered by him. No longer required or offered goods are wiped off the board.

⚓ The notes on the counter of this dealer refer to special orders or to the conveying of passengers. Special queries would perhaps be worthwhile.

Generally you can sell anything to a dealer. He will, however, pay a minimum price for non required goods which is below the cost price in most cases. If possible you should avoid such loss-making business.

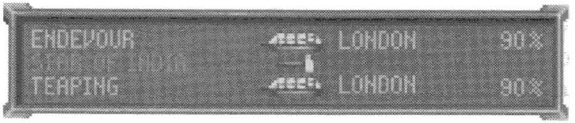
You can also purchase goods from the dealer, but only the merchandise that he has on offer. If you have several ships or one warehouse in the port you can select where the goods are to be delivered to. The dealer always offers the quantity of goods first which corresponds to the maximum loading capacity of the ship or to have maximum available capital. Naturally one can buy less. If you do not have enough money on the ship for the desired goods you can also pay for these from a second ship in the port or from a warehouse in this town.

In some offices notes are displayed on the counter. If you click any such note you will receive special orders or passenger conveyance. Some of the special orders are very favourable but they also entail great risks. (For instance: supply of arms to countries at war.)

If you have a ship fitted with cabins you may convey passengers. In this case a group of passengers may want to be taken to a certain port. These people will disembark only in the port of destination. Since costs will be incurred for supplying food for passengers, you should not arrange any sightseeing tours but head for the port of destination as quickly as possible.

Route Planning

Once the ship has been loaded you should send her to the port of destination. But what is the good of the most valuable cargo if it cannot be sold. In order to send a ship to a definite port you have to enter the ship dispatch mode. For this purpose you click the large ship on the main chart by using the left mouse key.



The ship selection menu appears giving you the names of your ships as well as the status symbol, the location and technical conditions.

The status symbols provide information regarding the availability of the ship and crew. Their meaning is as follows:

 Ship under sail:
Ship is available

 Hammer:
Ship is being repaired

 Ship's hull:
Ship is being built

 Wave:
Ship is in transit

 Men with question mark:
No crew on board

 Men with luggage:
New crew still to come

Only available ships may be selected. The names of non-available ships always appear in the selection menu in red print. When you have selected the desired ship a wild rose is shown instead of the usual mouse indicator (dispatch indicator) and the departure port is indicated by a rotating square. Additionally the navigation points can be seen. All selected ports and navigation points are always marked with a rotating yellow rectangle. Two of the sea navigation points are put on the land within the chart, namely the navigation point at Cape Horn and the Suez Canal.

Dispatch Indicator (click with upper left hand corner)

Navigation Point (not marked)

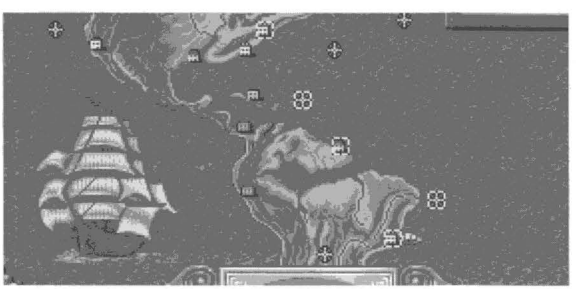
Selected Navigation Point

Selected Port or Port of Departure

If you click the port of destination by means of the left mouse key the temporary navigation points are selected simultaneously they are recognisable by yellow rotating markings. In the case of some routes it may happen that other ports are also marked. These ports serve as navigation points only as the ship will not put into port. By clicking the port of destination with the right mouse key you confirm the course and send the ship on her way. If a ship is on route she cannot be manipulated until she arrives at the port of destination.

⚓ Voyage scheduled from Rio de Janeiro to New York. The preliminary navigation points are marked.

⚓ The route would involve crossing the Sargasso Sea with its dead calms. By clicking the first point all following points are cancelled.



⚓ The more favourable route leads along the coast thereby optimally utilising the strong current of the gulf stream.

The automatically set route, however, will not always be the most favourable one. With the aid of weather and flow charts you will be able to make a decision regarding a better route. By clicking the last valid route point with the left mouse key all following points are cancelled. You can now enter all desired route points individually. Please take note that a longer route with more favourable current is better than a short route with a strong counter current.

Steamships have a limited range since they have to refill the coal bunkers during the voyage. Therefore, you can only map out their route within relevant reach. On the other hand steamships are largely independent wind and dead calms and they are also some what faster than sailing ships.

When planning the route always take into consideration the weather and current charts as well as the seasons. Excessively long voyages cause reduction of the freight rates.

Furthermore, you should reckon with the possibility that your ship may get into a heavy storm resulting in serious damage or in the worst case she may even sink.

⚓ Durch Anklicken des Schiffsrumpfes können Sie im Schiffsstatus und Mannschaftsstatus Ihre Schiffe durchblättern.

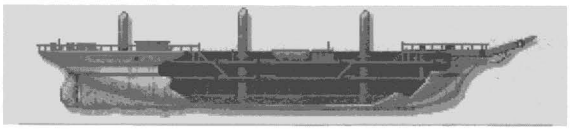
The extent of damage is shown in detail on the ship's status and the dispatch menu in the form of a percentage.

You must check on the condition of your ships regularly. Damaged ships result in unsatisfactory crossing times with correspondingly bad freight rates. In the case of iron ships you should check for barnacle growth regularly as excessive growth considerably slows down a ship. It is also recommended to arrange for a ship to be overhauled at a shipyard from time to time. The costs incurred are in most cases compensated by freight rates increasing afterwards. Do not attempt to save money unwisely.

Ship's Status

You access the ship's status by clicking the large ship in the main chart with the left mouse key. Thus you can inform yourself of the technical state and you can also control and manipulate the crew.

On the ship's status screen you will find information regarding the cargo and the cash carried on the ship. Furthermore, you



will be informed about the current location of the ship. By clicking the ship hull you can access all your ships.

Check your cash flow at regular intervals. For planned purchases there must always be sufficient money in the ship's cash account. If for instance you want to buy goods in Bombay, the money in the Liverpool head office does not help. Goods always have to be paid for from a ship or warehouse in the port where the purchase is effected.

But you must also avoid leaving too much money on a ship. The ship may sink in a storm and then money would be lost. It is, therefore, recommend to transfer the excess cash of profit-yielding ships from time to time to a branch office or to head office. It is also possible in the tavern to transfer the excess money to another ship.

Technical State

In order to obtain exact information regarding the technical condition of a ship click the state key. You will receive detailed information regarding barnacle growth, the taking on of water, condition of rigging or steam engine etc. You should take special notice of this information before planning repair work. It does not make sense for example to generally overhaul an otherwise completely intact ship with barnacle growth. A cheaper and quicker scraping job would suffice in this case.

⚓ In the crew control field you can enter the pay of the crew or the captain's order.

Crew Status

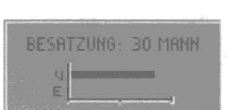
You access the crew status by clicking the crew key of the ship status screen. Thereby you can check and manipulate the crew of each ship. However the latter is only possible when a ship is at disposal.

Each ship has her own crew with their condition, ability and motivation directly affecting the ship's condition and speed. Within the crew control field you can obtain information regarding the vitality and experience as well as motivation of the crew. Furthermore, you can enter the amount of wages, alter the captains order and forecast a success premium.

A bar chart provides information indicating

the vitality and experience of a crew. The upper bar identifies the vitality and the lower bar refers to experience. The longer the bar the more rested or experienced the crew.

Vitality



The more vitality a crew has the better it performs. Caution! A badly exhausted crew may get the idea of putting an end to their suffering by mutiny.

Vitality is influenced by the length of a voyage, storms and by the captain's order. Do not deprive your crew of a relaxing break in the port after a long and stormy voyage. They will repay you by increased performance.

Experience

The experience of a crew plays a big role during storms. An experienced crew will master dangerous voyages for instance around Cape Horn. Additionally, ships with an experienced crew are less heavily damaged during storms. The experience of a crew also affects the speed of a ship.

Once a crew has mastered a storm or another difficult situation, their experience is enhanced. In this way a moderately reasonable crew can turn out to be a top crew.

When hiring a new crew the following rule should be applied: The more experienced a crew the higher are the wage demands. Therefore, you must make sure to select a crew to suit the ship.

Motivation

With the aid of the portrait you can determine the contentment or motivation of a ships crew. A smiling face indicates a happy crew. A grim-faced crew is perhaps already thinking of mutiny. If instead of a portrait the window is closed then there is no crew on board.

Payment of Wages

The motivation of a crew is affected by the payment of wages. If one would rather fire a crew than remotivate them one simply sets the payment on zero. Without payment of wages even the most loyal crew will not stay aboard. Members of the crew, however, who are still waiting to be paid off will not leave until the dues have been paid.

Captain's Order

With the aid of the captain's order you can determine how hard the captain drives the crew and how fast sailing is to proceed. These settings affect the vitality.

If you set an order on "EASY" it means that the crew is fairing well, they can take their time and have sufficient breaks. This humanitarian viewpoint will not affect the vitality.

With the setting "MEDIUM" the crew has to achieve more, any breeze is used, additional sails are used so the work is hard. Sailing times are reduced but with the adoption of this viewpoint vitality is decreased. Treat your crew to a break now and then.

If the ship sails under the order "HARD" the crew have to do their utmost. Sailing goes on day and night and the sails are not reefed even during storms. With this sweat and strain the crew's vitality is of course greatly affected and, therefore, you should keep an eye on your ill-treated crew.

Premium

In order to make sure that the men really drive the ship forward to achieve record times you can put up a premium. Every sailor can use additional money and they will make an almighty effort correspondingly. In the case of voyages with deadlines premiums are very high.

Always bear in mind that in order to achieve an optimum speed the condition of the ship and crew is decisive. Even the proudest clipper will not bring about record times when damaged nor can a completely exhausted crew achieve peak performances.

Historic Connections

Since 1869 incorporates actual historic events messages regularly appear they may bear a direct influence on the happenings of the game. The historic section of this handbook, therefore, may give you a decisive advantage over your competitors. Whilst your uninformed competitors may get entangled in the troubles of the American Civil War you will already have shifted your interests toward safer areas. Of course as a fair shipowner you should allow your co-players to gain an insight into this handbook. Astute business people, however, will mercilessly keep the handbook under lock and key.

Not all events have the same effect on the course of the game. The opening of the Suez Canal in 1869 causes a shortening of the voyage times to Asia which is a positive event indeed. On the other hand there was a sea blockade near Odessa during the Crimean War around 1854 coupled with the risk that ships may be captured. Accordingly this is a negative event which perhaps is only positive for the risky arms trade within crisis areas.

Due to crisis and wars ports maybe closed temporarily. During a civil war there is the danger that warehouses will be raided and burned down. Above everything, however, wars and crises affect the production and consumption of goods in a country.

Some newspapers reports concern technical developments or even inventions. Not all wars or clashes are reported in the papers as some of them are of loca interest only. Prior to putting into harbour you should, therefore, inform yourself about the active state of the country by using the information panel.

⚓ The newspaper contains news about important events or record voyages.

Options also offer the possibility to exclude newspaper reports. As before, the events will take place but they are no longer registered.

1869 represents a very accurate trade simulation as never seen before. We would, therefore, advise only historically well-informed players to switch off the newspaper reports. Do not underestimate the effects of daily historic happenings on world trade.

The Bank

⚓ This gentleman is described by some people as a loan shark. He claims, however to make nothing on loans.

By clicking the coin symbol of the main chart you may visit the bank at any time. It is located in the town of the firms head office.

At the bank you may take out loans or pay back already existing loans. However you became creditworthy only when you provide securities such as ships, warehouses or cash. In the case of loan applications without adequate security bankers react very unfriendly. The maximum extent of a loan depends on the value of your securities.

You may pay off loans at any time before the due date. Since this enables you to save considerable interest you should, if possible, repay loans as soon as possible. Loan repayments must always be effected by head office. Therefore, you must make sure under all circumstances that there is sufficient money in the kitty of the head office.

Settlements of accounts are always dealt with on the 31st. December of the current year. If a player is not solvent at this point in time then he must declare bankruptcy and is eliminated from the events of the game.

Therefore, be very careful with loans. The Balance Sheet screen provides an overview of existing loans.

Tax Regulations

As you might expect1869 also includes unpopular tax regulations. The state requests you to pay up and you have to follow.

Taxes depends on the total tonnage of your merchant fleet and is based on the tax regulations of Great Britain in the 19th. century. The Balance Sheet screen constantly provides an overview of the tax due for repayment.

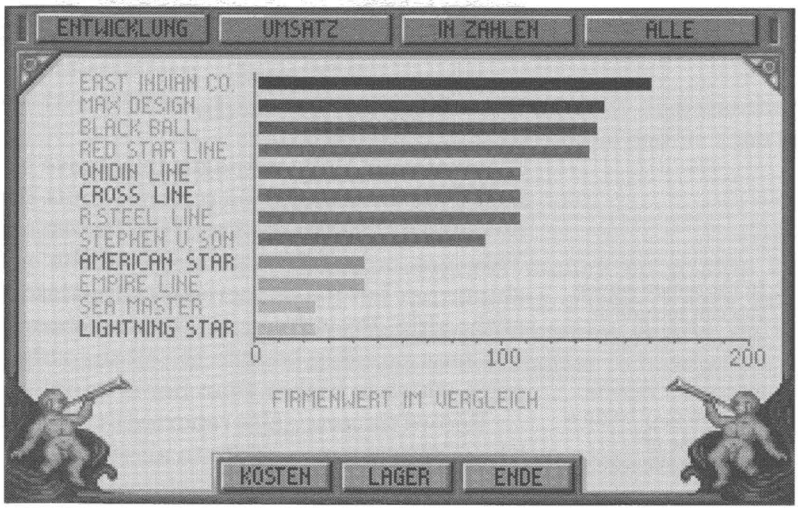
Taxes become due for a whole year on the 31st. December of the following year. For instance the taxes for the year 1854 have to be paid on the 31st. December 1855. Debiting is effected automatically from the cash account at the due date. If you are unable to pay the taxes your firm has to declare bankruptcy and you will be eliminated from the game.

The Balance Sheet

The balance provides a survey regarding due dates of taxes and loans. Furthermore, you can check your stock of goods and cash flow.

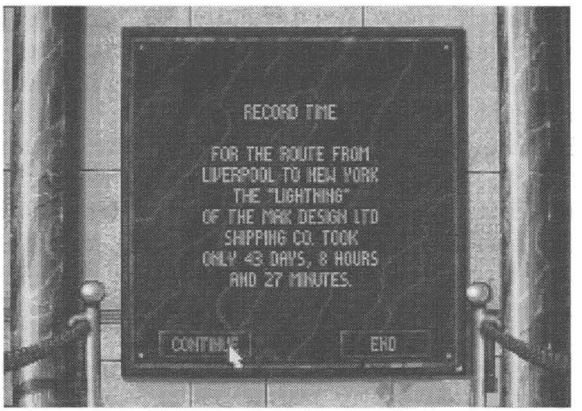
Keep an eye on turnover and development of the firm. You are given the choice to either quickly look at a graphical representation or a listing of figures. The representation of turnover and company development assists in a very good way to recognise economic tendencies. Moreover it permits direct comparisons with your competitors and you are able at any time to see how you are placed in the race for the distinction of greatest shipowner of the century.

Using cunning, dexterity and by knowing the tricks of the trade you have the chance to become the best shipowner of the century in history and to be included in the list of the elite.



⚓ The balance sheet provides information about the development of turnover and offers a good means of drawing comparison with the competition.

⚓ It is the dream of each shipowner to see his ship on the list of records of the fastest crossings.



The List of Records

If one of your ships manages to achieve a new best time for crossing on a record route it will be immortalised in the list of the fastest ships. This not only lifts the mood of the proud shipowner but it also increases the sales value of the ship. Providing circumstances are good one may possibly be able to sell the ship at a price which is higher than her original price.

Record times are also reported in the papers. These record times relate to all stored games.

Options (Loading and Storing)

The option screen offers possibilities such as loading, storing, new game or finish. In order to load a game status you have to click the desired name and select "LOADING". You can also cancel a game status.

In order to store a game status you click initially the first empty step of the stairs. Now give the game status a name and click "Storing".

In this connection, too, you can exclude or include newspaper reports or leave 1869.

⚓ In the option screen you can include or exclude loading, storing or newspaper reports and you may begin a new game or complete the old one.

Tips & Tricks

In real business life and in this game, too, there are some golden rules which should be observed under all circumstances. Only in this way will one achieve the success hankered and hoped for. Beyond that of course there are numerous tricks which help a business man on the road to success. Every successful trading tycoon has his own special tricks and knacks which he will not disclose. For all budding shipowners we want to reveal here some golden rules and tricks.
1869 makes available a wide field for experiments and strategies. Find out your own personal tricks and try out these to see which is the best way to succeed.

Ten Golden Rules

Rule № 1
Always load ships fully. It is better to have a ship fully loaded with cheap goods than to have a ship half-loaded with expensive merchandise.

Rule № 2
Undertake as few profitless voyages as possible. Especially avoid voyages with no cargo.

Rule № 3
Always keep ships in good condition. The advantage of an intact ship offsets repair costs.

Rule № 4
When purchasing a ship leave enough money to buy goods.

Rule № 5
Always pay taxes on time and keep money for this in reserve.

Rule № 6
During route planning current and weather charts help to save time, and of course time is money.

Rule № 7
Leave only as much money on a ship as required for purchasing goods, wages and repair costs. Surplus money should go to the warehouse or even better to head office.

Rule № 8
Watch political conditions in ports. Unsafe ports mean high risks.

Rule № 9
Keep an eye on the crew and select the crew to suit the ship.

Rule № 10

Do not miss good business.

Where do I purchase the right goods?
This trading simulation is based on the economic system of imperialism (see chapter "Imperialism"). Raw materials are imported from colonies and under developed countries then they are processed. The finished products are in part sold back to the colonies with high profits.
Many products such as fruit, cotton, and tea depend on harvests and are not always readily available. This means you have to be in the right place at the right time.
Produce that depend on harvests can be contaminated during a long voyage and become useless. If one has perishable goods on board one should try to reach the port as soon as possible. Produce deteriorates at the same rate for instance fruit spoils much quicker than tea. One should also bear in mind that naturally such goods can get spoiled in a warehouse. The motto should therefore be to get perishable goods to the buyer as quickly as possible.
You can learn about the main export goods of a port using the information panel.
It provides information regarding the goods and their largest quantities kept in storage ports. Thus harvest bound goods are also indicated since they are the main export article during harvest time. When accurately observing the relevant information panels one can be fully informed regarding the relevant harvest times.
With harvest dependent goods it is absolutely necessary to reach the relevant port in good time. In most cases the product is available for two to three months only. Therefore, plan your arrival in such a way that you arrive at the right time. You should take into consideration the possible duration of the trip.
At the beginning of the game it is best to restrict yourself to trade in nearby ports.

Only with sufficiently large financial reserves may one dare to venture to such far away markets as Asia.

Second-Hand Ships at the Beginning
At the beginning of a career one should - if possible - refrain from having new ships built or buying expensive second-hand ships. When purchasing ships make sure that sufficient money is left for the cargo. What is the use of the nicest and fastest clipper if it is used for futile voyages only.

No Risky Freight at the Beginning
Keep your hands off risky freight at the beginning of the game for instance arms deliveries into territories at war. Even when the profit seems tempting, the risk of losing perhaps your one and only ship is simply too high. If, on the other hand, you have several ships later on in the game it could turn out to be a most lucrative business even though it may not be exactly honourable, to load arms onto a second-hand ship and sell them at a high profit to a territory at war.

Taking into Consideration the Political State
It is extremely important at all times to keep an eye on the political state of a country. If a country is in a stable state then it is not dangerous to put into its ports and conduct trading. But if there is unrest it may happen occasionally that roaming gangs raid and plunder your warehouse or ship. The cautious trader takes little or no cash at all on voyages to countries where there is unrest. If uprisings are the order of the day in a country it can happen that your warehouse or ship is plundered completely so that you have to put to sea without money or goods. Therefore, without very good reason one should avoid such ports.

Under no circumstances should you put into port in territories where civil or other wars are being waged. If one is unlucky the ship might be sunk without warning or explanation. That is the risk with which arms dealers have to live. It is true of course that a large profit can be made when delivering arms to territories at war but in the worst case the ship complete with cargo is sunk.

Ship to be Loaded Fully at all Times
Always ensure that your ship is fully loaded. It is far better to load a ship fully with cheap goods than to half load her with expensive merchandise. Try to make as few empty voyages as possible otherwise your budget will be consumed by running costs. Take only as much money as needed for trading. Surplus money is best kept at head office. It is safe there and prevents you from getting embarrassed when loan repayments or taxes become due.

Repairing Old Ships
The older a ship the more expensive the repairs. With the same extent of damage the repair to an old ship costs more than for a new ship. At some time the point will be reached with each ship when the repair costs exceed the purchasing costs, meaning that repair work is no longer worthwhile. Therefore, sell old ships in good time.

The Right Crew at The Beginning
To begin with you should not burden yourself with the wages required by a top crew. As in all probability you will own an average ship, therefore you should also hire an average crew. Proven to be reliable and dependable men, they do not cost too much and they are not landlubbers either.
It can happen that you are stuck in a port without money or goods. The crew refuses to work as they are not paid wages. In this case you can dismiss the old crew and hire another one. The new crew expects wages after their first voyage.
This very unkind method will only work, however, when there is no cargo on board. Otherwise one would be forced to sell a part of the cargo at a low price so that after paying the crew one can convince to carry on working.

Breaks for the Crew
Since the speed of a ship is considerably affected by the crew you should always keep an eye on the vitality of the crew.
If their vitality sags the ship will go slower. Therefore, it is an advantage not to go non-stop over long distances but to call at a port in between and let the crew have a short period of rest. Thus the men can replenish their strength, vitality is increased and

with it the speed of the ship. The time lost in the port is compensated by an increased sailing speed.

Use Breaks for Repairs

Whilst the crew recuperates in the port you can use the time to have your ship overhauled quickly. This is advisable especially after stormy crossings which can often cause severe damage. A damaged ship loses speed and by having her repaired you effectively gain time. When planning the route for long voyages bear in mind that during the voyage you will not be given the possibility to act, meaning that even after heavy storms you cannot simply take your ship to the next dockyard. Therefore, to be on the safe side stop on the way when you are making a long voyage.

Save Repair Costs

It need not always be one of the best known or famous shipyards. Give a small dockyard for instance in Bombay or Kapstadt a chance and you will see that these shipyards carry out the quality of work at a lower price.

Terms of Loans

When taking out a loan you should agree such terms so that the loan expires at the beginning of a year. The bank always settles up on the 31st. December. This means that if loans are unpaid by this date and interest for delay to be paid, then bankruptcy procedure is introduced at a time of maturity. If the terms finish at the beginning of the year then one still has time to raise the sum at the end of the year. However, this is not an easy undertaking when one thinks of the very high interest on delay.

Observe Due Tax Dates

Taxes for one year have to be paid at the end of the following year. This means that the tax due is automatically debited from head office accounts on the 31st. December.

Bankruptcy Even in the Case of a Firm Doing Well

If there is not sufficient money in the head office account bankruptcy procedure is introduced. Even a busy firm with sufficient capital or assets can become

bankrupt when at the tax due date there is not sufficient money in the office account or when due loans are to be repaid.If the value of a firm drops below a certain limit, a bankruptcy procedure is also introduced.

Delivery Times for the Purchase of Ships

Take note of the delivery time of a ship since you have to pay the tonnage tax due retroactively for the whole year. Therefore, one should plan the purchase in such a way that the ship is delivered at the beginning of the year. Thus it is ensured that one does not pay taxes needlessly. For the same reason you should sell ships at the end of the year.

Locations of Warehouses.

Think carefully about the location of a new warehouse. Each warehouse costs money and after closing a warehouse this money is lost and the value of the firm's assets are reduced.

Warehouse at Strategic Points.

Wherever possible establish your warehouse at strategically important points to enable you to control and cover the market.

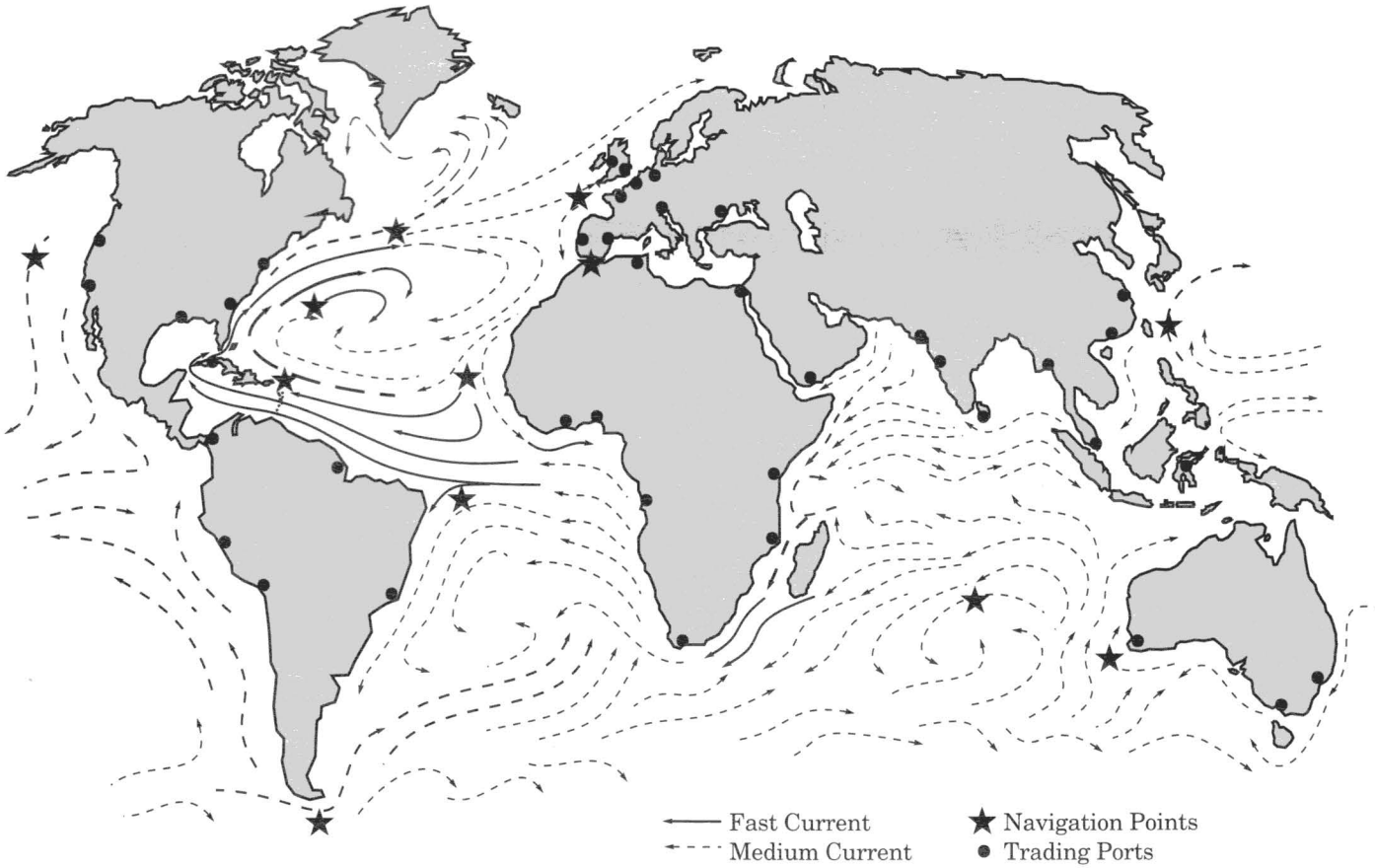
Tea Races and Special Orders

Tea races and special orders placed with your office is good business. For tea races you should aim to arrive in good time in India during the harvesting period with a fast ship and a good crew. The newly harvested tea is to be loaded and the port of destination headed for as fast as possible. For the first cargo of tea one receives a good premium. If you are too slow, then someone else will snatch the premium from under your nose.

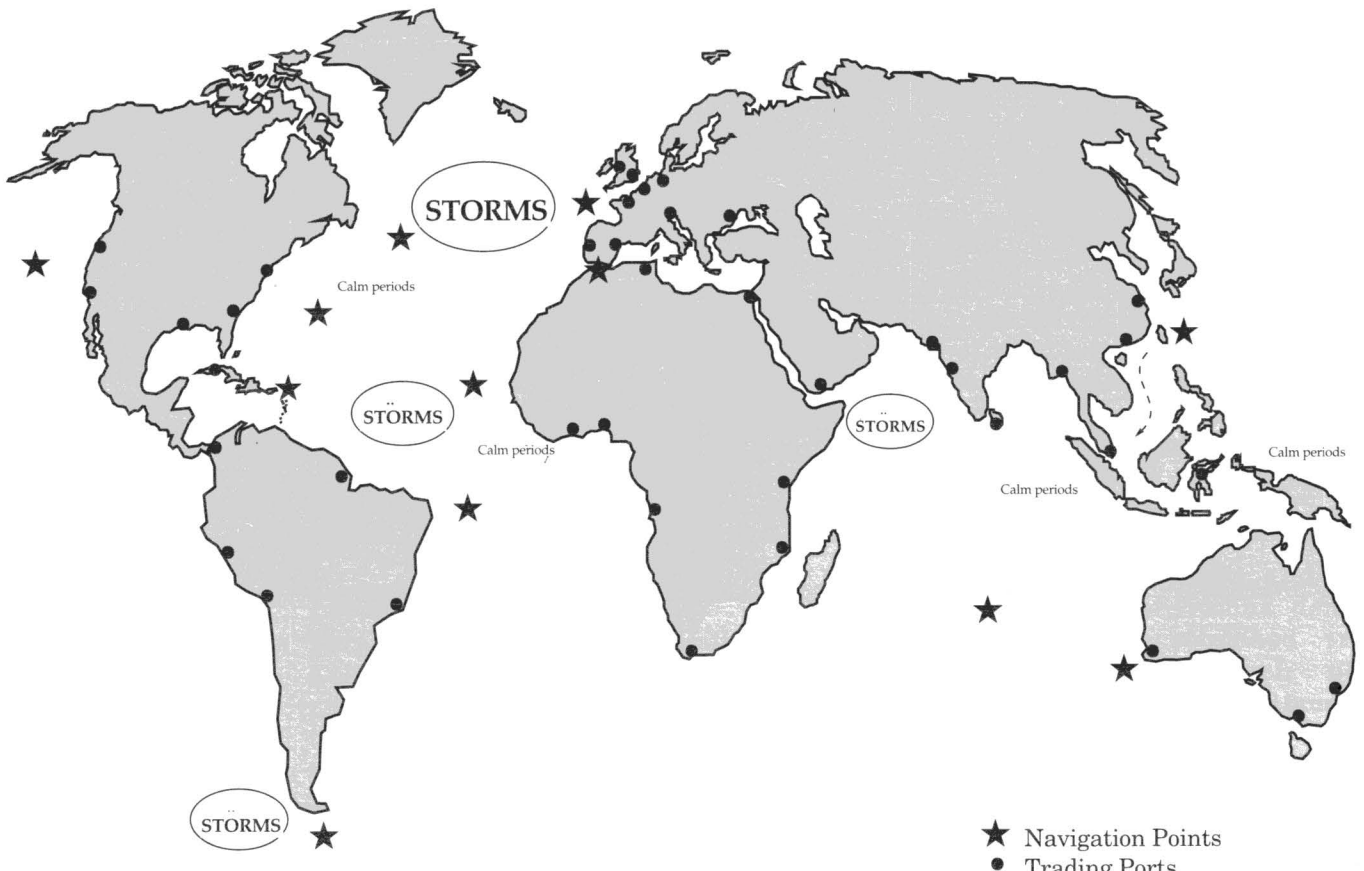
End of Civil Wars and Wars

After the end of civil wars and wars there is usually an enormous demand for goods from the reopened trade merchants.Putting into such ports will certainly bring about some good business.

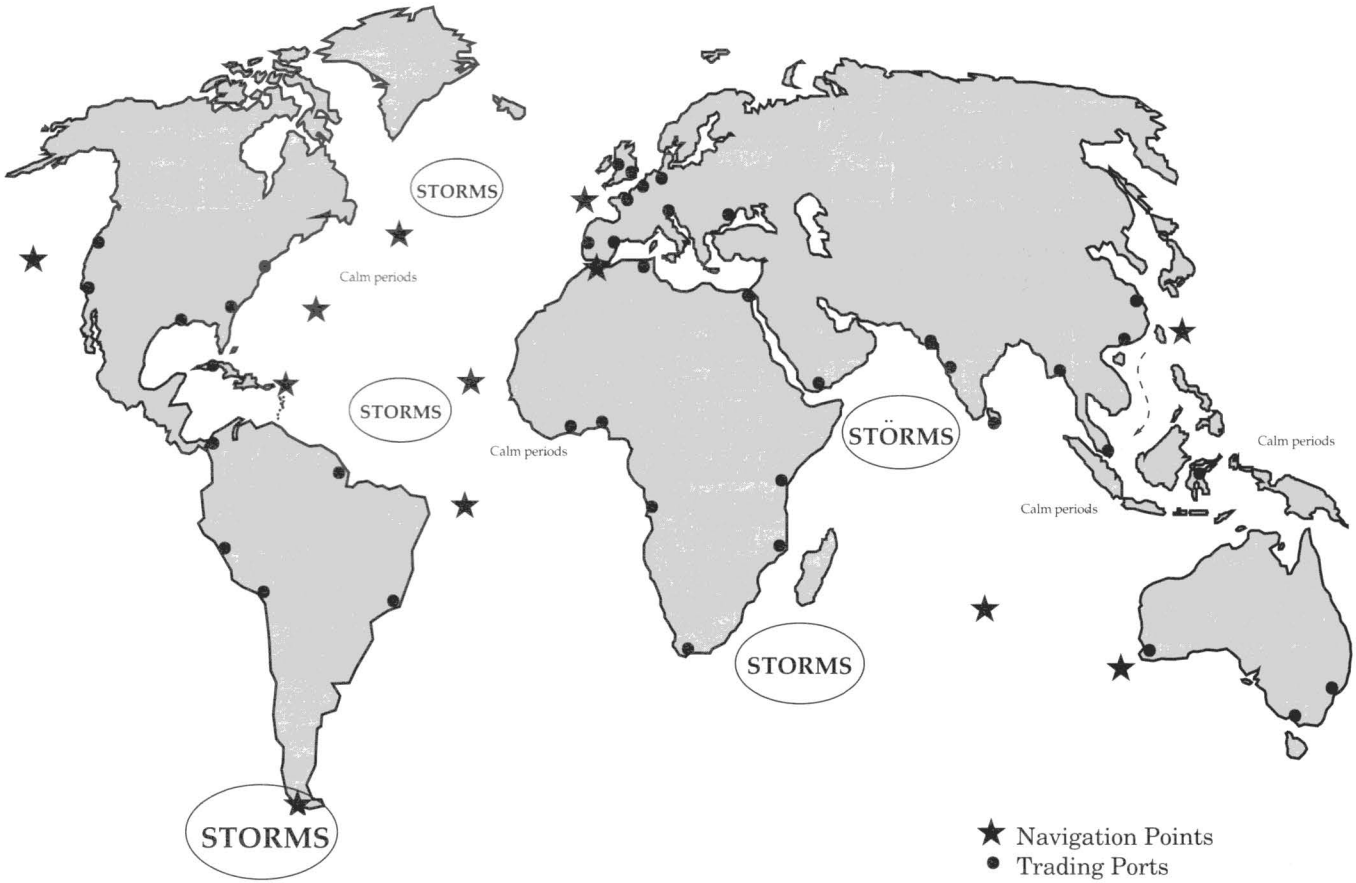
Sea Currents



Storm Hazards Winter/Spring



Storm Hazards Summer/Autumn



List Of Reference Sources

The following literature has been used:-
"Das grosse Buch der Schiffe". Orbis Verlag, München 1992
Dyson, John and Christopher, Peter:- "Spirit of sail". Pietsch Verlag, Stuttgart 1988.
Fieldhouse, David K. Hrsg. :- " Die Kolonialreiche seit die 18. Jahrundert.
(The colonial Empires since the 18th. Century).
Fischer Weltgeschichte Fischer World History), Volume 29. Taschenbuch Verlag, o. O. 1987.
MacGregor, David R.:- "Schnellseger 1775-1875. Konstruction und Geschichte".
(The Fast Sailing Ships. Construction and History.)
Weltbild Verlag, Augsburg 1990.
Maddocks, Melvin:- "Die Überquerung des Atlantics".(The crossing of the Atlantic)
Reiche "Die Seefahrer" (Series: The Seafaring Man)
Time Life Books, Amsterdam 1982.
Mann, Golo Hrsg.: Proplyäen Weltgeschichte (World History)
Volume 8. Propyläen Verlag Berlin 1991.
Mondfeld, Wolfram zu :- "Schicksale berühmter Schiffe" (Fate of Famous Ships)
Heyne Sachbuch. Wilheim Heyne Verlag Munich 1989.
Neukirchen, Heinz:- "Seefahrt gestern und heute". (Navigation at Sea Yesterday and Today) Transpress VEB Verlag für Verkehrswesen, Berlin 1970.
Schaufflen, Otmar:- "Die letzen grossen Segelschiffe" (The Last great Sailing Ships)
Delius Kasing Verlag, Bielfeld 1977.
"Taschenatlas völker and Kulturen" (Times, Peoples and Cultures)
Volume 3, Östereichischer Bundesverlag, Vienna 1982.
All illustrations of the chapters "The World of the 19th. Century" and "Navigation at Sea in the 19th. Century" were taken from the above books. Illustrations on Pages 18 and 19 are from our own sketches.

For further information about shipbuilding in the 19th. century we especially recommend the excellent book by David McGregor "Schnellseger 1775-1875" (Fast sailing ships 1775-1875)

Regarding further information about still existing sailing ships we recommend the very detailed and impressive book by Otmar Schauffler. "Die letzen Grossen Segelschiffe" (The last Great Sailing Ships)